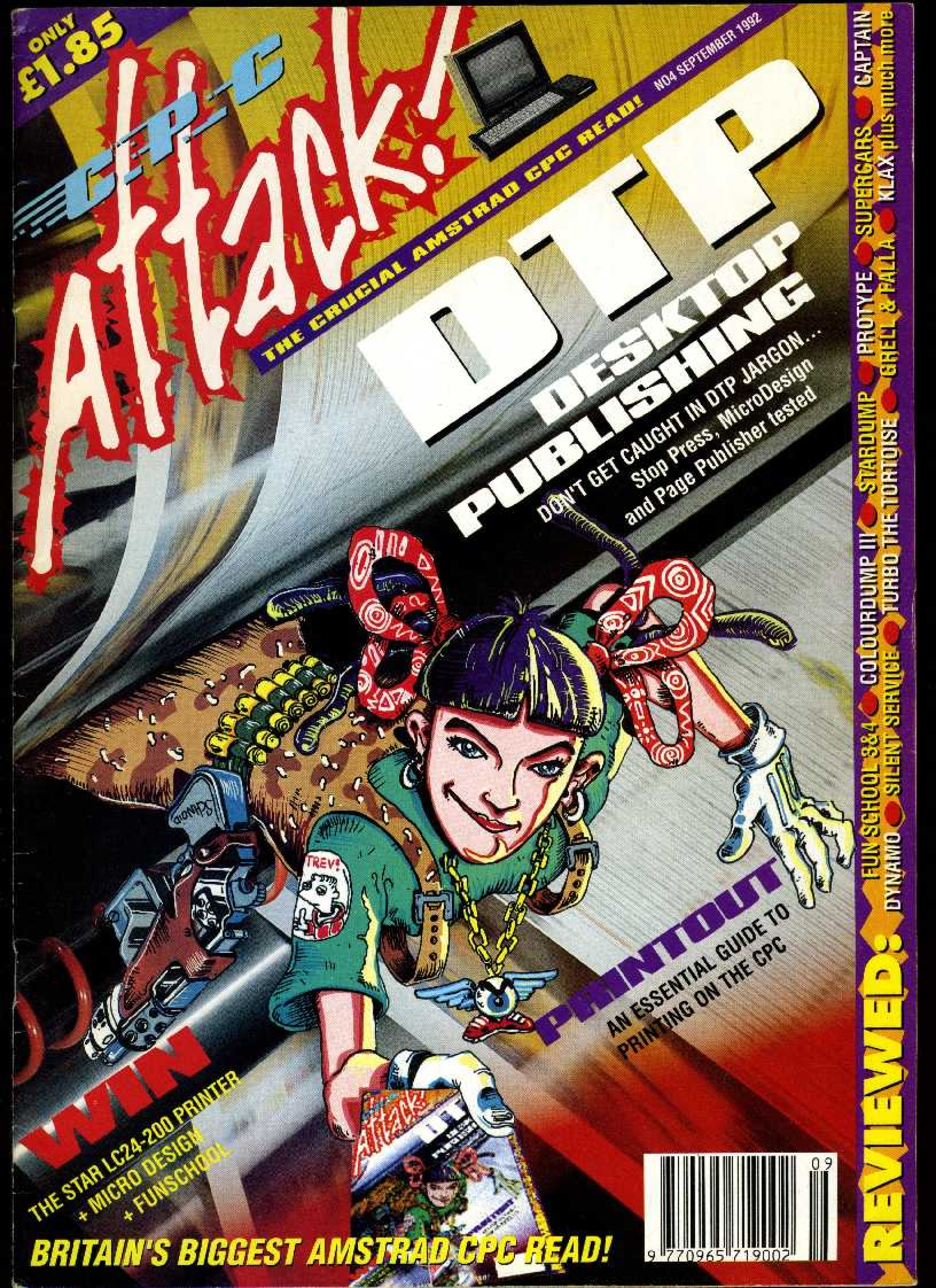


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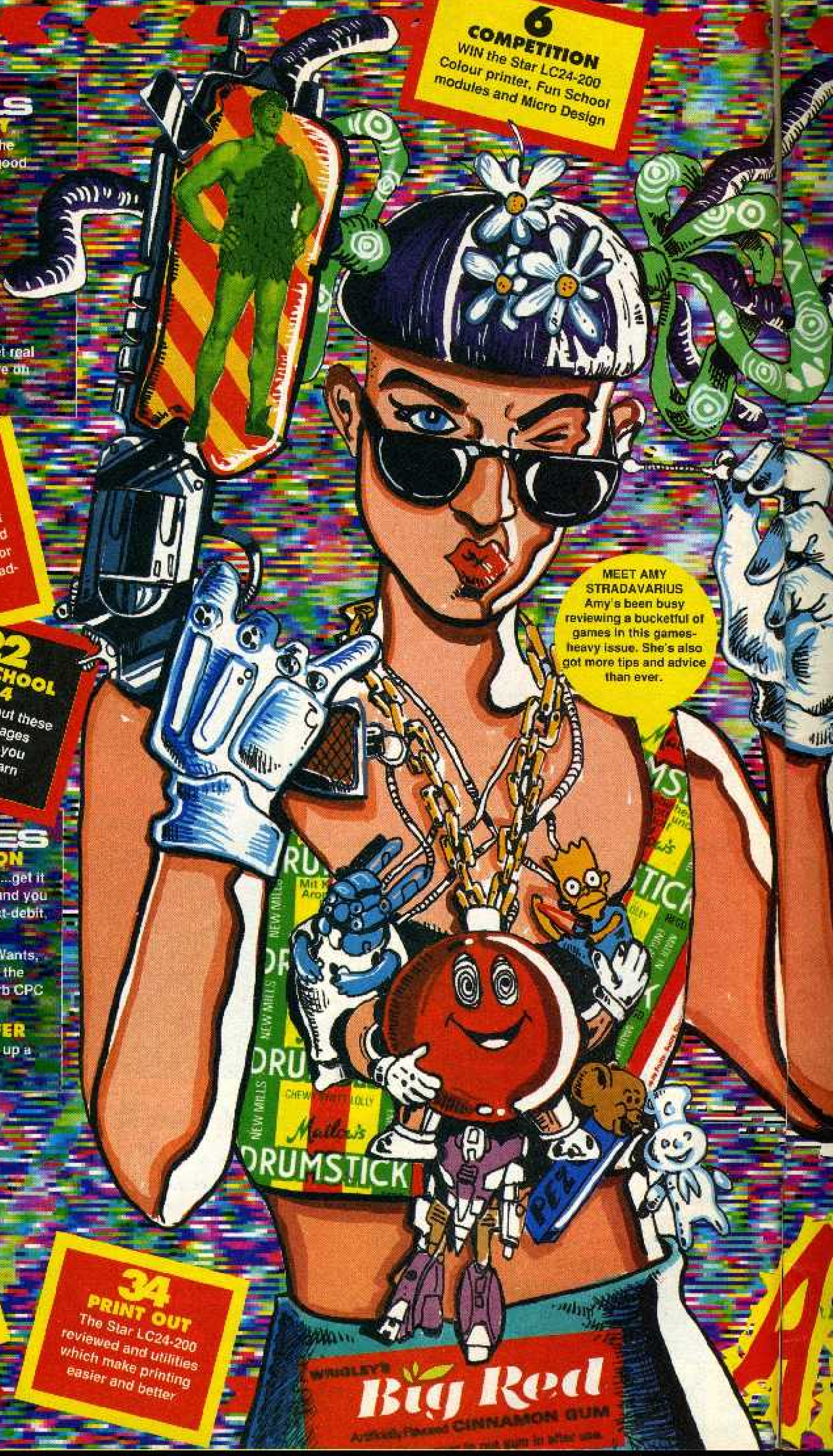
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MEET AMY STRADAVARIUS
Amy's been busy reviewing a bucketful of games in this games-heavy issue. She's also got more tips and advice than ever.
DRUMSTICK
Big Red
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Welcome to CPC ATTACK!

If you ain't making mistakes, you ain't making anything - that's this month's Attack! motto. Yes, we've made boo-boos, we've done things wrong, we've even said a few things we shouldn't have. It's all in the process of delivering the coolest magazine around. Attack! is one excellent magazine and we're all chuffed to bits over it.

Gameswise, there won't be a string of releases from now on, but big licence games will be converted. Codemasters are also releasing loads of quality stuff at penny-pinching prices with The Hit Squad, Kixx, and GBH re-releasing some excellent games.

We first highlighted that the CPC was selling more software than other computers such as the Atari ST in issue 1. We then proceeded to exclusively review the best game that's ever been released on the CPC - Lemmings. We've given you in-depth reviews of word processors, desktop publishers, art packages and not forgetting our unique Public Domain coverage.

We'll continue to do the same in the coming months and hope you'll be frank enough to write in and tell us what you think. If you don't then both of us lose out - we don't want that now...do we?

REGULARS

CPC Attack!

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SPECIAL THANKS
To all the backroom boys who helped out and to everyone else that knows us.

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CONTACT

Is there something we should know? Need help on technical matters or games? Want to get something out in the open? Then you need a contact.

You can be certain of getting your enquiry answered within the magazine if you address your letter to the right person or department. We can't personally reply to enquiries, either by telephone or post, but, you can reach us by writing to, or faxing the listed departments at:

CPC ATTACK!, HHL Publishing, Floor 3, Greater London House, Hampstead Road, London. NW1 7QQ
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P.S. If you have a problem with any advertising company in the magazine, you can always call our advertising department as long as it's between normal working hours. They are always available to help with your problems.

CPC Q&A
Always ready to answer your problems, the technical help section is crammed with helpful advice, tips and readers' problems. If you have any advice or handy tips to offer, send them in - prizes awarded for every tip.

LETTERS
If you ever feel the need to express yourself, want to tell the world how wonderful you are, how crap a program is or if you wish to join in the topical forum, then get scribbling.

SUBMISSIONS
We are always on the look out for interesting and topical articles for publication. If you have a special set-up, or know of a special utility, you could write an article about it for CPC ATTACK! You could become a regular contributor, earning lots of money for your work.

PROGRAM LISTINGS
Listings and 10-Liners are superb learning ground for would-be programmers, and they also provide excellent utilities and games. In CPC ATTACK!, all listings are treated as submissions and, as such, contributors are paid real cash. Please remember to include a disc or tape with the listing on it!

AMY'S PMT
Whether you want to give pokes, maps, tips (and cheats) or want to get some, this is the place to do it. Lotsa prizes to be won each and every month for the best submissions published.

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Not only for getting rid of your old equipment and grabbing a great bargain, but also for CPC contacts and user groups. The best way to sell your product.

COMPETITIONS
Lots and lots of COMPO's. That's what we'll be striving to offer. You can win quite easily, but you'll have to get your entry into the correct hat! Any competition wrongly addressed goes straight into the dustcart.

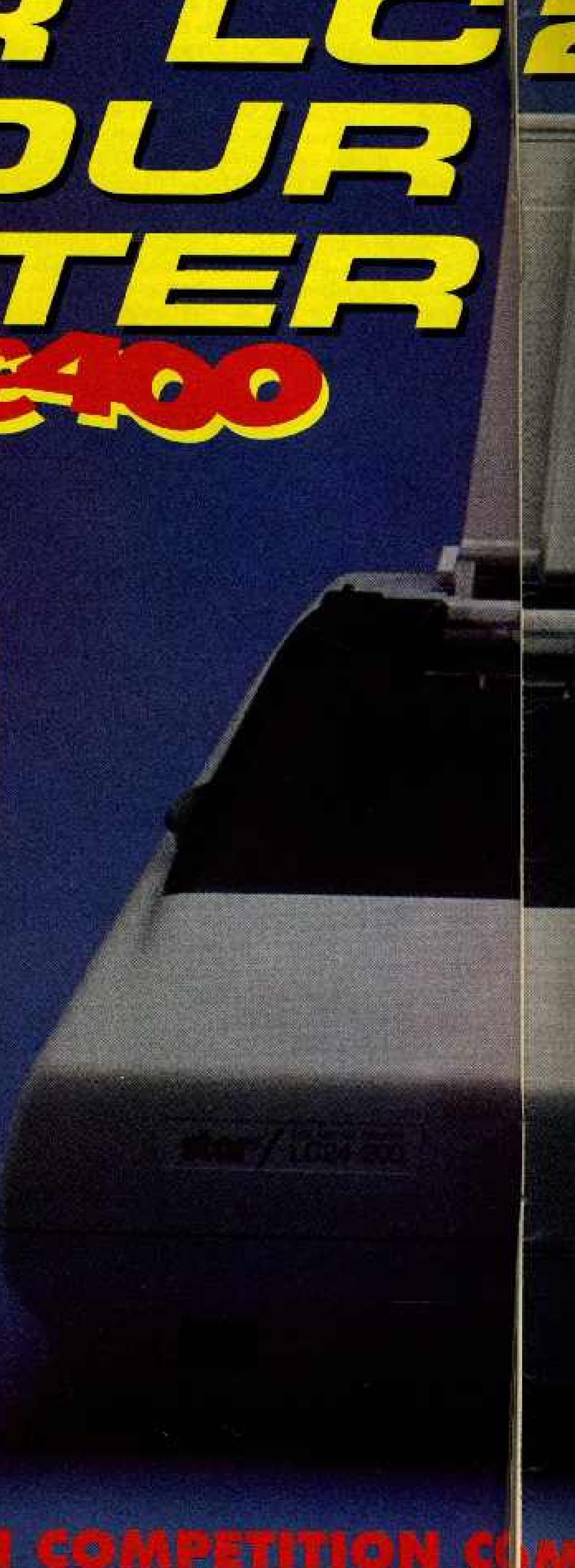
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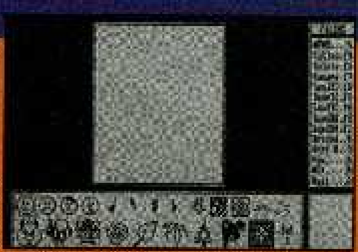
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Answers on this page, photocopy, or a postcard to: September (oooh, it's that month already?) Competition, CPC Attack!, HHL Publishing, Greater London House, Hampstead Road, London NW1 7QQ or fax: 071- 387 9518

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SNIPPETS

S.D. Microsystems have released a new soundtracker for the CPC. Called Boo-tracker, it is alleged to be more flexible than any similar package on the market. You have 8 octaves to play with and drum synthesis, so who knows, maybe you too could be the next Stock, Aitken and Waterman, (well maybe not, eh?)

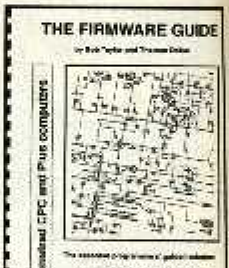
Richard Fairhurst from Robot P.D. is due to release a communications package shortly. Called "Charley's Comms Rom" it will be marketed under the "STS Software" label, already famed for some top quality P.D. utilities, and also The Soft-lok Speedlock tape-to-disk transfer program. The package runs under AMSDOS and features include Fully Automatic download protocol detection, a maximum reliable data transfer rate of 4800 bit/second, menus selection of features, RSX driven interface support, and Ymodem (batch) download ability. The ROM will retail for around £30 and will be available within a month or so.

Indiana Jones 4 from US Gold, has had its release withheld until the end of the year so isn't available for review. Also, Gunship, which was previously to appear on the CPC through the budget KIXX label, is now only being released on the Commodore 64 (Eurghh!!).

CPC Network have released the latest version of Tearaway, THE utility for Multiface owners. Tearaway is able to hack into any 64K program and once in, you can disassemble the code, search for lives in a game, display full system information, view memory and even send output to your printer. Tearaway is available from CPC Network, 3 The Cottons, Outwell, Wisbech, Cambs. PE14 8TL and costs £12.50.



FIRMWARE GUIDE



The Print-Out firmware guide has arrived. Since the discontinuation of the official guide three years ago, Official guides have been like decent games for the Speccy (impossible to get hold of). When this one landed on my desk I had to fight for it. Luckily, I had the advantage (actually a lead pipe hidden up my sleeve!), so I got it!

The guide is very professionally produced, and contains virtually all the information you'll ever need, including the undocumented firmware calls and maths subroutines. Priced at £4.50 for the basic guide (and cheap at twice the price!), this is probably the best investment you'll ever make for your CPC. To compliment the release of this guide, the authors have released a program tape and disk. Each contains a set of programs "designed to make using your CPC or Plus computer easier". The programs cost £2.50 and £4.50 for tape and disk versions respectively. Contact Thomas Defoe at: 9 Maze Green Road, Bishops Stortford, Herts, CM23 2PJ.

DISK BACKUP

R&C Systems Design are offering a unique service to all disc owners. For a flat fee of £5.00 they will back up any format of 3" disc, including all previously uncopyable disks. R&C stress that original disks only must be sent, and the game will be backed up onto the reverse side of the master disk, so the service CANNOT be abused by software pirates. Once the disk is backed up, it still remains uncopyable by the user. This, according to Chris Woods, technical director of R&C, is, "to protect both the users and ourselves being accused of piracy. We believe that everyone has the right to back up software that they have paid good money for. You can rest assured that we are firmly committed to the CPC market and will do our utmost to support it." R&C can be contacted on 081-552 8900.

Microstyle, once one of the largest 3.5in. CPC disk drive suppliers are allegedly in a bit of trouble. Not for the first time they seem unable to fulfil orders and waiting time for products has been known to be more than a year. If you have ordered a product from any company and have not had it delivered (28 days is the maximum wait allowable by law), then it is advisable to take yourself along to the small claims court. The initial cost for this is a maximum of 10% of the total value claimed, which, if the claim is in your favour, is paid for by the defendant. For more information pop along to your local Citizens Advice Bureau.

All of Microstyle's products can be obtained from GVL Microform. Please do not pester GVL Microform about any problems you may have with Microstyle, they are two completely separate companies.

ADVENTURE NEWS

The Dungeon is no longer with us. After much thought, it was decided that as adventure games are of general appeal there should be no "specialised" sectioning of it. In fact, many would-be adventurers were put off by the sectionalisation of adventure news and games. Others, it has to be said, loved The Dungeon, but we think that we are serving more folks by bringing the column out of the closet and spreading its influence across the whole magazine.

Adventure news will be found in the NEWS section, game reviews in the REVIEWS section, and finally help and tips in the Pokes, Maps and Tips section. The only problem is that adventure companies must send their games in to be reviewed and adventurers must pass on their news and game tips.

The Adventure Workshop has been started by Philip Reynolds to take over from where The Guild left

FOUND

Thanks to all those who sent in applications for the Technical Editor position. The job has been given to Robert Marwood Scott (see pic).

Robert (or Rob to those who don't know him that well) has been slightly amended (for improvement purpose) by our cameras so you won't recognise him even if you wanted to (oh yes you will...it's not that amended!)

His recent claim to fame is that he's written Soft-Lok, available from Campursoft (that's enough plugging), but he's also written lots of other utilities which are dotted around the PD and Demo scene.

It's Robert's task to find interesting and technical stuff to write about. As well as earning lots of dosh, he'll also be making the coffee and doing all the other crappy bits associated with working in an office.





20Mb HARD DRIVE

Siren Software, who have been supporting the CPC for over 8 years, are once again considering producing a 20Mb hard disk for the CPC. Simon Cobb from Siren Software says that he has been deliberating for some time as to whether to release the unit, which has already been "prototyped" and is awaiting suitable driver software to be written. The unit will be retailing for "around £400" which could perhaps place it out of financial reach for the majority of users. 20 megabytes is the equivalent of around 56 3in. disks! Nice bit of kit hanging off the back of our favourite computers. If you would be interested in seeing the hard disk produced, then write to Siren at the address below. Also new from them is ROMDOS XL, a suped up version of the very popular 3. 5in. disk operating system. Rumoured to have built in copying and format commands, the new version will enhance ROMDOS as the best all all round disk operating system available. Siren can be contacted at: Wilton House, Bury Road, Radcliffe, Manchester M26 9UR.

GADGET ENHANCER

Campursoft, the company renowned for the superb Micro Design enhancer, Micro Design+ are almost set to release a gadget that could revolutionise the CPC green screen owning fraternity. The device provisionally called "VideoMaster" is an RGB to composite video conversion unit. Designed to out-do the old MP series modulators, which it has to be said were abysmal, this unit will enable you to have glorious full colour CPC screens on your TV, and works on any TV/Video system that is British, and has composite video IN or Scart/Peritel sockets. The unit is rumoured to cost around £30.00, and an official release date has not yet been released. Also new from Campursoft is a scanning service for users of Micro Design. Quite simply, for a small fee you can have your favourite artwork reproduced into a format that can be loaded into MD. For more details, call Peter Campbell on 041-554 4735.
News just in from our reporter on the spot, is that Campursoft now accept Access and Visa cards.

DISK DRIVE WARNING

EWS

off. The Adventure Workshop will be dealing with new orders so any orders already sent will be honoured by The Guild.

Prices of the adventure games range from £2.00 (for tape versions) to £6.00 for multipart games on disk. There are special prices for disk/tape compilations.

In addition to taking up the titles from The Guild, TAW has just released five new games: The Bounty Hunter, Treasure Island (2 parts), Captain Kook (2 parts), The Silent Corner, Microfair Madness (3 parts) and Desmond and Gertrude which comes with the free game Aunt Velma Is Coming To Tea.

Help on a host of games and/or a full catalogue of games can be delivered if you include an SAE to: The Adventure Workshop, 36 Grasmere Road, Royton, Oldham OL2 6SR.

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Look here!

In your first issue you referred to "10 Liners" and "Listings", but I can't seem to find them anywhere within any of the issues I've seen, so where are they?

I buy magazines mainly because of these programs and would hate to think that you are mentioning them just to entice readers, to let them down at a later date.

Secondly, how come we cannot get any software on discs for the Amstrads unless it is put on special order? Shops won't stock anything on disc, but they do cater for tapes.

Harry MC Hall, Mansfield

Short and long listings will happen as of next issue. We didn't have space before because of the BASIC tutorials. We thought that we'd get the non-BASIC familar people up and running on the language before starting with listings that might have been double-dutch to them. Now everyone reading Attack! should have a grounding in BASIC and more will enjoy the joy of listings.

Shops won't stock expensive stock unless they know they can't sell them or even get their money back if they don't sell. This happens a lot with other computers too, so don't worry too much. If you want a product, you'll have to wait a day or so for it I'm afraid.

You've heard it before, I know... it's all here and all that gumph, but we all need a letters section to have our say, both you and me

BOGUS!!!

Hey, don't you know that Bogus means absolute rubbish and not fantastic! You'd better change your outlook so as not to give good games a bad award.

James Mason, High Wicombe

Oh dear, red face time again! A bit of an explanation may be desirable at this point. We are the victims (not innocent I suppose) of being carried away with trying to be younger than we actually are - being members of the old-boys keep swinging Rave club (OBKSRC) as we are. At the time, some of us (we're just poor oldies) thought that it was one of these negative words which has had its meaning turned positive through the miost of time to become fashionable with today's yoof.

We were wrong and don't we know it. We've been slagged off left, right and centre, and not without good reason. We've had our memberships withdrawn by the OBKSRC and again apologise unreservedly to everyone and anyone.

We have withdrawn the BOGUS GAME AWARD and have upgraded the EXCELLENT GAME AWARD to all those games scoring 90% and upwards - hurray!

READER REVIEW?

Why hasn't your consoles section spotlighted the ATARI LYNX. I am the proud owner of one of these amazing little beasties and it's better than the GAMEBOY and the GAMEGEAR. I think you're being biased towards NINTENDO and SEGA.
How come PRO TENNIS TOUR didn't get into the TOP 50 when it got a higher score than PUZZNIC which did get in?

Tony Hutchinson, Saltney

Is this a reader reviewer or not? We were biased towards the more popular machines and we unreservedly apologise.
You nearly gave me a heart attack 'cos I thought that I made another glaring mistook, but PRO TENNIS TOUR didn't get in as a new entry, but it's already in as it was listed in our original TOP 50 feature in issue 1.

Hey!

I have recently purchased an Amstrad 6128 plus, after having an "old" 6128 for many years. I really bought it for the extra features (i.e. the Cartridge port and all those lovely colours), and also so that I could use all my old games on it. I now find that cartridges are impossible to get hold of. I have tried Dixons, Menzies, even the Virgin Megastore but to no avail. So far all I have got is a few shrugs of the shoulders. Please can you help me as I am really losing heart now.

Steve Martin, London

Regarding the carts, as far as I can make out, most of the software houses seem to have lost interest in making them, perhaps due to the poor sales of the plus machines. Don't despair however, because Codemasters have recently discovered how to access all the extra features WITHOUT needing the cartridge, and have produced a game called Striker in the Crypts of Trogan, which is in the shops now.

Oi You!

Having bought June's issue (number 1) I was quite impressed and when I saw that next month there was to be an article on drives and directories in a new series for new computer users I did no more than place a regular order for Attack! Having received the July edition, I saw no trace of the promised series. Is this the level of reliability we can expect? A mention would not have come amiss of the delay or cancellation of this series.

P.J.Bailey, Kent

I don't seem to recall the page where we said that we'd be doing what you have said. It's definitely not on the "Next month" page and to be honest it's the first I've heard of it. It's a good idea though, but it wouldn't last very long...are you sure it wasn't a follow-up to a series we were doing? Please give us a call on 071-388 3171 if you can clarify what page the alleged promise was made - I can't find it for the life of me!

Ouchh!

I have heard a nasty rumour that the Dungeon column is being scrapped, thus leaving no forum for the adventurer. Is this true, because if it is you'll regret it. There are many adventurers who are very passionate about their hobby although not noisy when things are okay.
Can you clarify this rumour and if it's true can you rectify your stance by including an adventure column.

Brian Wilcott, Bristol

Ah, news travels fast in the CPC world. Your worst fears have been confirmed by the omission of The Dungeon as from this issue. Fear not though, because when the decision was made to wind up The Dungeon provisions were made for adventurers.
True, there will be no more column, but the show will go on. Firstly adventure news will be reported in the NEWS pages, as is most other news including "commercial" game releases and "serious" topics. Reviews of adventure games will be included in the mainstream "commercial" game reviews section, and finally, game tips can be passed on in the Pokes, Maps and Tips section.
It's all up to you adventurers out there - you may end up with more coverage than there has been before. However, if no tips and help are passed on, if adventure producing companies send in their news and games for review, then there won't be anything - so adventurers it's time to get busy and give yourselves space in Attack!

Hurray,

Congrats on your excellent (not bogus) magazine! It has made me realise that my 6128 is more than just an obsolete games machine.
However, I do have one criticism; if you are going to give away free games on the cover, could you please ensure that they work! I attempted to load Amy's Puzzle game several times, but the only results were strange graunching noise from the disc drive; also no other discs will now work.
Perhaps other readers could advise if they had similar problems.

Hugh Janus, Harrow

Ah! So that's what you're meant to do with them. When the Promotions Manager first presented the puzzles as a cover mount idea we were actually too embarrassed to say that we didn't know what they were - we said they were great and they were given away - sorry they didn't work though!

Whatchit!

I have read about a HARD DISK for the Amstrad CPC in your magazine, from Germany. I would like one of these things, but am loathe to send £400 so far away. Do you know if any company closer to home is planning to produce them?

Tim Farrell, East Ham

Funny you should say that, Tim. I was speaking to Simon Cobb, from Siren Software the other day (as ya do!), and he said that they have had a prototype planned and built for some time. All that needs doing was writing a decent operating system. I reckon if enough of us get together and write to Siren they may go ahead with the project. Contact Simon Cobb, Siren Software, Wilton House, Bury Road, Radcliffe, Manchester M26 9UR and let him know what you all think.

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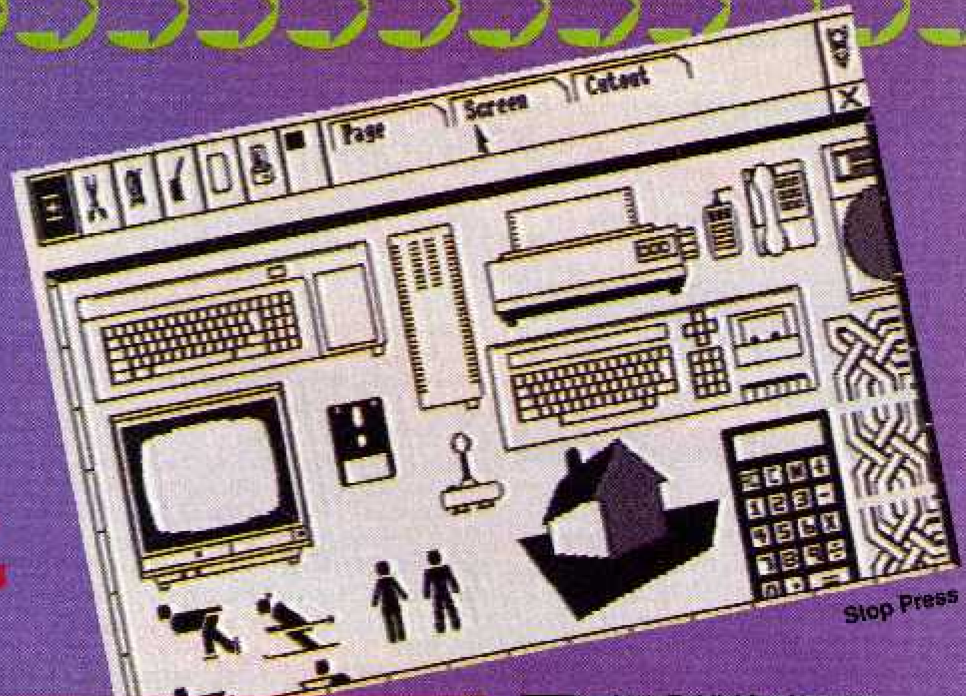
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The CPC can be used to produce fanzines, newsletters and impressive flysheets, but which package to use? And which is best for you?



Stop Press

DESKTOP PUBLISHING

TEST RUN

Desktop Publishing has now established itself as the modern way to publish books and magazines, in fact CPC Attack! is put together using professional DTP programs. While a CPC program can't be used for professional publishing, the quality of some recent CPC programs is very impressive. To find the best general program, we decided to put three of the best DTP programs against each other. Stop Press, Page Publisher and MicroDesign Plus were given pretty extensive testing in the main DTP disciplines.

The general purpose of a DTP program is to mix pictures and text onto a single printed page. It therefore follows that using a DTP program falls into three distinct activities; designing graphics, handling text and printing.

All of these programs are based around a single A4 page, of the three programs, only the MicroDesign program offers any page size options, the options are; a normal A4 page, an A4 page printed sideways or a strip format. The strip format covers one quarter of an upright A4 sheet and allows for a very high resolution output. Four quarter strips can be printed together to produce one A4 page.

GRAPHICS	
STOP PRESS	★★★★★
MICRODESIGN	★★★★★
PAGE PUBLISHER	★★★★

All of these programs offer the basic graphic design tools: drawing lines, boxes, shapes etc. In each of these programs, the detailed design work is carried out on a portion of the whole page. Whilst all of the programs can move the design window in any direction, you can only work within the window. This means that it would be difficult, but not impossible, to draw a box around the whole page. None of these programs can display the whole page at normal size but each can display a miniature view of the whole page.

The MicroDesign program, as the name suggests, offers extensive graphic design facilities. The basic tools include drawing lines and shapes; boxes, circles, ovals, diamonds etc. All the shapes are drawn using an elastic band technique, with control points being used to make the shape bigger or smaller. One excellent point to note is that the shape can be seen on the screen at all times so it is very easy to move the shape into the correct position before fixing.

Whilst areas of the design window can be erased, copied or moved it is not possible to rotate or re-scale an area of the design from the main menu, although re-scaling is possible from conversion program.

MicroDesign offers an excellent icon system, an icon is a small mini design which can be pasted into the page at any position, 66 of these icons are available at any one time. The icons sets can be stored or loaded from disk, which gives you the capacity to use a limitless number of icons.

Icons can be one of two sizes, a grid of 16x16 pixels or a grid 24x24 pixels. The icon design tool offers the ability to edit any existing icon or design a completely new one.

Using an icon is just about as simple as it could be. Press the Enter key, to display the icons, pressing the f1, f2 or f3 keys will toggle through the icon sets available in memory. The cursor keys are used to select the icon. Pressing the f4 key will rotate the icon 90 degrees, while the f5 key will flip the icon left to right. Once the selection is made, pressing the Enter key again returns you to the normal design cursor, press the I key and the cursor is replaced with the icon which can now be moved and fixed into position.

Page Publisher is also equipped with all the normal graphic tools to do the job; pen, brush, fill, shapes (circle, box and ellipse). This program offers some little extras, for instance the pen can be any one of ten line styles. Again we see the icon type idea, Page Publisher calls them fill patterns, although using fill patterns is not quite as easy to use as the MicroDesign icons.

I found some of Page Publisher's graphic tools difficult to use, for instance the circle tool is used by plotting two points; centre and radius. The difficulty is that these points are not marked on the screen in any way, so it is impossible to line the shape up with other items on the screen.

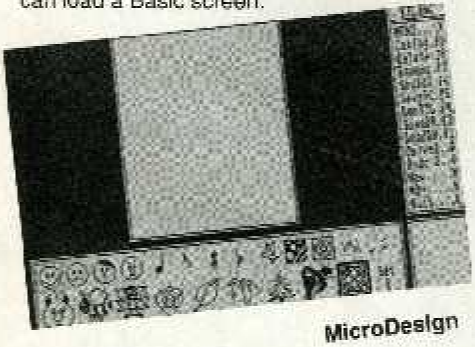
Stop Press also offers all the basic graphic tools; lines, boxes, shapes, flood,

etc. All of these tools are very straightforward and easy to use. Stop Press does offer some functions which are not available in either of the two other programs; for instance an area of the screen can be re-sized.

CLIP ART	
STOP PRESS	✪✪✪✪
MICRODESIGN	✪✪✪✪✪
PAGE PUBLISHER	✪✪✪

All of the programs are able to import graphic clip art picture files in some form. Each of these programs can import Basic 'screen' files. How you save the Basic screen to disc really depends on the program you are using. Of course, any of your own Basic programs can be edited to include a simple save screen to disc routine. The MicroDesign disc even includes a small screen saving program to include in your own programs. One possibility that came to mind was that it may be easier to create some graphics in a short Basic program, which could then be imported as a Basic screen.

Only Stop Press can save a Basic screen file to disc. This would allow screens to be passed to Page Publisher, MicroDesign or any other program which can load a Basic screen.



MicroDesign

Both MicroDesign and Stop Press can load clip art in the CUT file format. It should also be noted that a large amount of clip art is available for the PCW versions of Stop Press and MicroDesign and most of this clip art is supplied in the CUT file format. Although the CPC cannot read a PCW formatted 3" disk, most of the companies I've checked with are happy to supply clip art if supplied with a CPC formatted 3" disk.

TEXT HANDLING	
STOP PRESS	✪✪✪✪✪
MICRODESIGN	✪✪✪✪
PAGE PUBLISHER	✪✪✪

Other than printing text handling is the most important function of a DTP program, without a good, easy to use text import facility a DTP package is no more than a drawing program.

MicroDesign offers three ways to handle text. The Write mode allows text to be entered directly on to the page. While four sizes of characters can be used, only one font style is available. Other fonts can be loaded from disk. The text can be entered in any direction even backwards. The drawback to using this Write mode is that the design window can not be moved whilst entering text, so this method is really only suitable for short amounts of text which stay within the window.

The second text handling method is a very clever use of the icon system. 24 of the supplied icon files are in fact sets of letters in different font styles. The icon system has a special Alpha mode which allows the icon characters to be typed into place. This mode is very useful for entering headlines.

The last text entering method, uses text from a prepared ASCII text file which is formatted into a MicroDesign graphic file. The program allows a great deal of control over how the text is formatted; character size, font used, the number of characters per line and the number of lines per page. However, the program will not format the text, splitting words across lines. Once the new file is complete, the column of text can be pasted on the MicroDesign page.

On the whole Page Publisher offers very extensive text handling. Three fonts can be loaded from disc, the program is supplied with ten fonts, which gives a fair amount of flexibility. All the fonts can be expanded by up to five times the normal size, however, at that size the characters become very jagged. The program also includes a fairly easy font editor, so that you can design your own fonts.

Text handling centres around the text menu which allows for text columns to be set, word wrap and/or justification to be set. Text can be entered directly or loaded from a prepared text file. The only difficulty I encountered was that the program seems to get confused at the end of the page, with lines of text being printed on top of the last line.

Stop Press can handle text from either keyboard or file. Four of the eighteen supplied fonts can be loaded into the program at any one time. All of the fonts can be adjusted, either for height or width. This program also offers the facility to design and save your own fonts. Text can be set using most of the usual functions; centre, justify, right justify. You also have the choice of using columns or auto-flow. The width of any column is user defined, from a few characters wide to the full size of the page. Auto-flow is an unusual feature in a program of this type, and would do justice to programs costing far more than Stop Press. When using auto-flow, text is wrapped on to a new line whenever an obstacle is encountered, for instance text could be enclosed in a circle or box. Of all the programs Stop Press provides the better text handling facilities.

COMPATIBILITY	
STOP PRESS	✪✪✪✪
MICRODESIGN	✪✪✪✪✪
PAGE PUBLISHER	✪✪

The compatibility of a DTP program with other programs such as a drawing package or even other programs on different machines is of great importance, perhaps a PCW-owning friend is equipped with a scanner or you may know a PC owner with a laser printer.

Stop Press is the fore-runner of Stop Press on the PCW and any files saved in the Stop Press CUT format can be passed between the two programs. The PCW version of MicroDesign can also read and write files in the CUT format.

MicroDesign can directly load Stop Press page and CUT files. Files saved by MicroDesign are in the same format as the MicroDesign programs on the PCW and PC, of course this means that users of this program will be able to pass files to other users on these machines. A by-product of this compatibility is that CPC MicroDesign pages can be printed from these other machines using inkjet and laser printers, producing stunning results.

PRINTING	
STOP PRESS	✪✪✪✪
MICRODESIGN	✪✪✪✪✪
PAGE PUBLISHER	✪✪✪✪

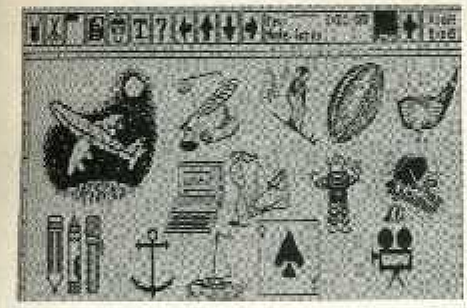
Printing any DTP page takes time and lots of it, a full A4 page can take over half an hour to print out. If you are going to use the printed page for any sort of publication you will also need a new ribbon.

Micro Design offers printing at three scales; full, half-scale and quarter-scale, while with Stop Press and Page Publisher you can choose between full or half-scale. All the programs offer a choice of print quality.

All of the three programs support IBM or Epsom 9-pin printers, while the MicroDesign and Page Publisher programs also allow you the option of customising the printer codes, so using any other printer should not be a great problem.

Goldmark Systems are

SCORING	STOP PRES
GRAPHICS	
CLIP ART	
TEXT HANDLING	
COMPATIBILITY	
PRINTING	
DOCUMENTATION	
TOTAL (30 max.)	7



Page Publisher

currently developing a program to print MicroDesign files on 24-pin printers, Stardump, which is reviewed elsewhere in this very issue.

The print quality from all of these programs is very similar, although MicroDesign, in A4 strip format, clearly produced the best quality print and is about as good as can be expected from a 9-pin printer. It is not a practical proposition to use any of these programs to print multiple copies of pages but rather the best plan is to print a master copy which can then be photocopied or printed at a local print shop.

DOCUMENTATION	
STOP PRESS	✪✪✪✪✪
MICRODESIGN	✪✪✪
PAGE PUBLISHER	✪✪✪

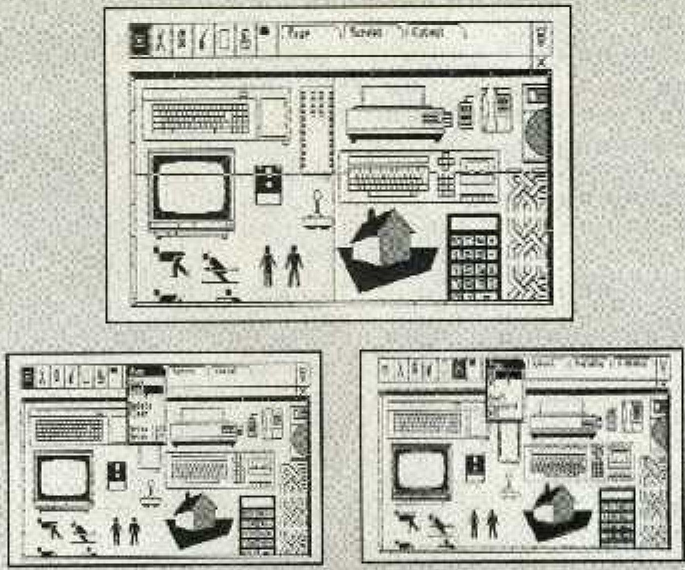
The Page Publisher and MicroDesign manuals are adequate, reasonably written and well laid out. Getting to grips with the programs posed no problems, however neither of these manuals offered any kind of tutorial help. Both programs are supported by a telephone helpline, so you can always phone if something proves to be tricky.

The Stop Press documentation is simply on a different level. The substantial manual not only covers how to operate the program, but also gives a good tutorial with worked examples and other general DTP advice.

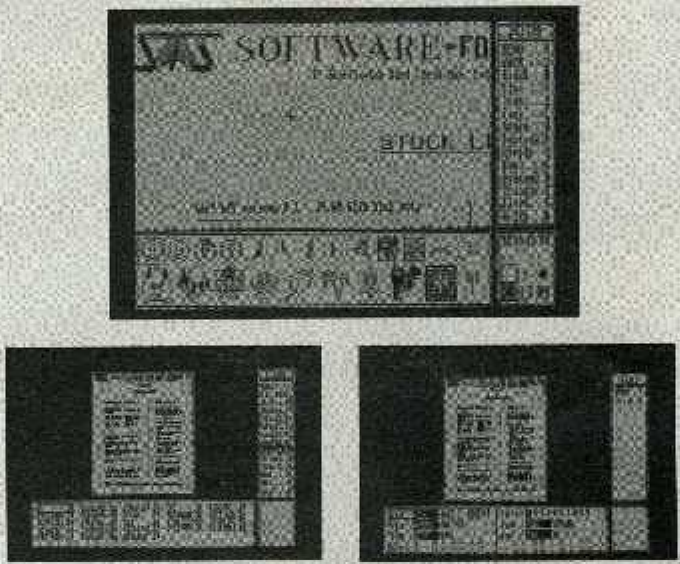
COMPARISON TABLE

...OPPRESS	MICRODESIGN	PAGE PUBLISHER
✪✪✪✪	✪✪✪✪✪	✪✪✪✪
✪✪✪	✪✪✪✪✪	✪✪✪
✪✪✪✪✪	✪✪✪✪	✪✪✪
✪✪✪✪	✪✪✪✪✪	✪✪
✪✪✪✪	✪✪✪✪✪	✪✪✪✪
✪✪✪✪✪	✪✪✪	✪✪✪
27	27	19

STOP PRESS



MICRO DESIGN



PAGE PUBLISHER



VERDICT

Although Stop Press has the most facilities of the three programs, it is an annoying program, most functions need to be loaded from the program disk, at the time of use, which means lots of disk swapping.

The Page Publisher program is quite remarkable, the whole of the program is held in memory, so you will never need to swap your data disk for the program disk. I found Page Publisher competent and it does the job in hand, with text handling being noticeably good. It could have been better if some of the graphics functions had been easier to use.

MicroDesign is a very competent program and it is easiest to use even though some parts of the system are held as separate programs.

Whilst picking any one of these three programs should prove to be a good buy, MicroDesign is tops because of the easier-to-use graphics and compatibility with MicroDesign on the PCW and PC.

CONTACTS

MicroDesign Plus
Campursoft,
16 Slatefield Street,
Gallowgate,
Glasgow G31 1UA

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SD Microsystems,
PO Box 24,
Holbeach,
Lincs. PE12 7JF

Stop Press
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Unit 2, The Arches,
Icknield Way,
Letchworth,
Herts. SG6 1UJ
0462 481166

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Bloomfield Street North,
Halesowen,
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021 585 7424

Mick Harrison,
283 Abbey Street,
Derby DE22 3SW
0332 381210

Goldmark Systems,
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Hatfield,
Hertfordshire AL10 0SY
0707 271529
(clip art sample disc £2.50 or SAE for printed samples)

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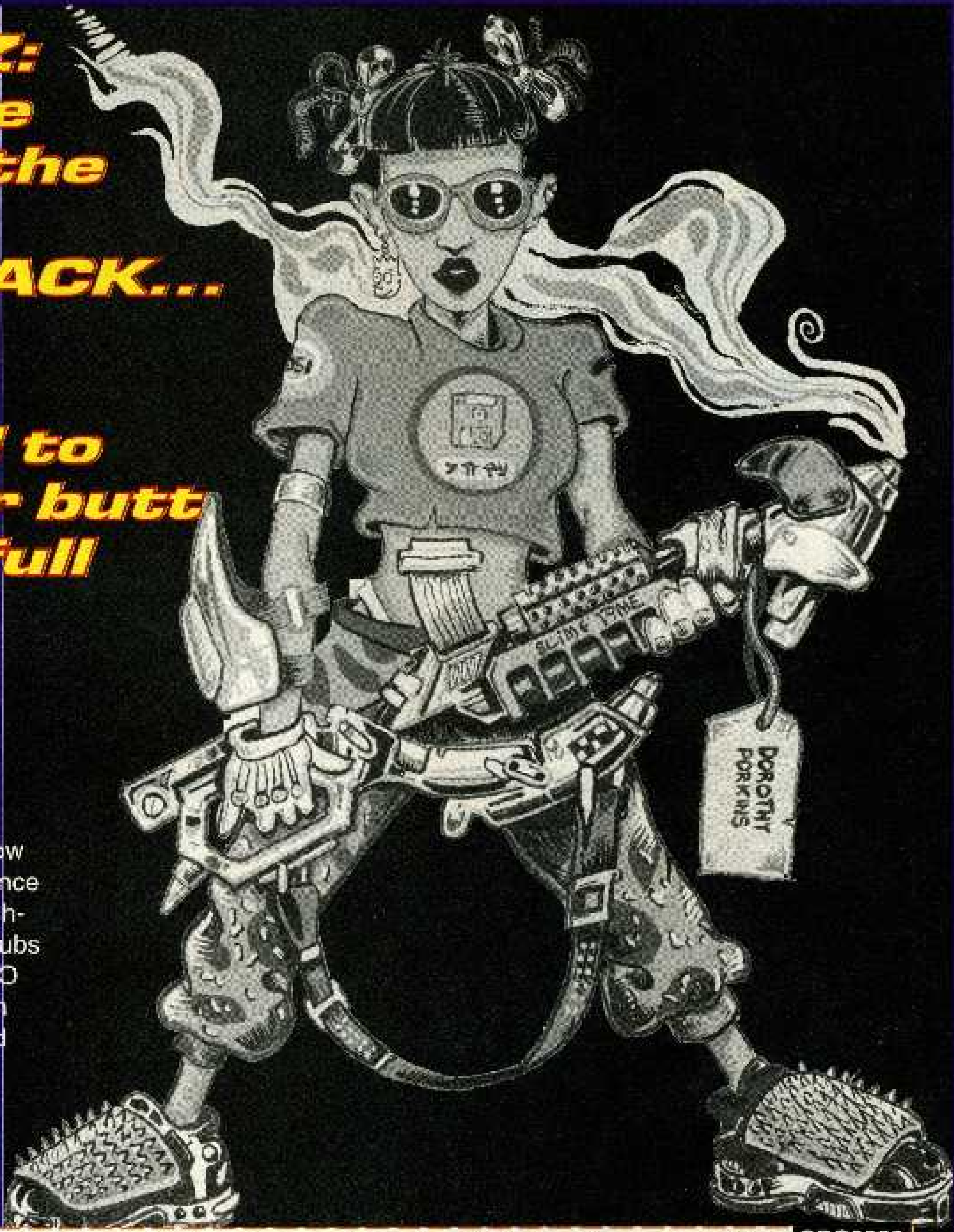
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FEATURES COMPARISON TABLE

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GRAPHICS			
LINE/BOX	✪	✪	✪
SHAPES	✪	✪	✪
FLOOD	✪	✪	✪
ICONS	✪	✪	✪
ROTATE AREAS	✪	✪	
TEXT			
FONTS SUPPLIED	✪	✪	✪
FONT EDITOR	✪	✪	✪
IMPORT GRAPHIC AREA FROM:			
BASIC SCREEN	✪	✪	✪
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PRINTING			
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WHETHER IT'S IN CLASS, OR OUT OF CLASS, FUN SCHOOL 3 & 4 HAVE LOTS TO AMUSE AND EVEN MORE TO TEACH

Who said that 'School days are the happiest days of your life.'? To be honest, I don't know and I don't really care 'cos he was rong (sorry, wrong). Mind you, whoever it was probably had the advantage of decent tutors and a private school. (Choice in education, you see.) But despair not, now we all have a choice, though I don't mean Maggie's policies will enable us to choose between high fee paying schools and low fee paying schools when it comes to the concerned education of our little horrors. The choice now is whether or not to buy the excellent, Fun School series of software for home, or school use.

We've had a look at three programs each of Fun School 3 and Fun School 4. In general, both series are well structured and carefully organised, but in our non-expert opinion (we're not teachers) there are slight anomalies and the odd technical problem (bugs?)

FUN SCHOOL 3 & 4 UNDER 5s

These contain lots of bright colour and nice chunky sprites to captivate young imaginations, and that's common to all the programs tested.

Along with the magic of the CPC, FS3 & 4 make learning an unnoticed pleasure. Everything is a game and most toddlers love playing games. The problem is probably going to be dragging them away from the screen so that we, the hard-working and conscientious parents, can play with our word processors and that newly acquired piece of educational software called Lemmings.

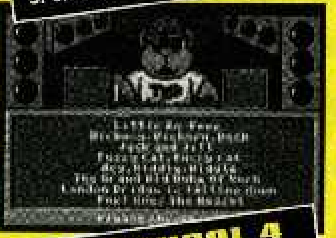
Any one of the six learning sections (in each program) is almost worth the price of an individual package. On FS3 all the 'games' are excellent and simple in the extreme. The little monster can control everything with the use of two keys, the nice large <Space> bar and the almost as large <Return> key.

Pick of the bunch is the Painting module, which merely requires the selection of a colour to 'paint' an object, or element in the picture. It's a sort of electronic colouring book, and painting 'by numbers' combined. I loved it! FS4 , is a gnat's whisker more advanced, and one module - Teddy Paint - is much too difficult for an under 5. My favourite was Teddy's Karaoke, which wouldn't teach the child a great deal, but would keep the little devil entertained and off its parents back for hours! The anomaly on this one was that documentation, and the disc, instructed me to RUN"DISC. It didn't! Recourse to cataloguing the thing told me that RUN"FS4 was a better bet. It was! Documentation is excellent and instructs the parent, or teacher how to augment the programs with spoken explanations. In addition, packaging is superb. Free goodies are included in the box such as a good quality promotional button-badge and a road safety sticker. Every one of the programs was presented in this way.



FUN SCHOOL 3 UNDER 5s

1. MATCHING
2. ACTIONS
3. GALLERY
4. COUNTING
5. LETTERS
6. PAINTING



FUN SCHOOL 4 UNDER 5s

1. ADDITION
2. TEDDY PAINT
3. FUN TRAIN
4. TEDDY'S HOUSE
5. TEDDY'S KARAOKE
6. TEDDY'S BOOKS

FUN SCHOOL 3 & 4 5-7 YR OLDS

FS3 was like the curate's egg, good in parts. The Journey module was a bit of a no-no and its only real value was (maybe) to teach the child the difference between left and right. I managed to crash Funtext twice (perhaps a duff disc) lost interest and moved onto the next section. The other four modules were simple excursions into arithmetic, recognition of objects, telling the time and a final brilliant section called Electricity. This latter program used movable squares containing symbols which complete an electrical circuit from a battery, through a switch and light bulb, and back to the battery. If the child replaces the 'off' switch with an 'on' switch the circuit works and lights the bulb. It was that simple, but the reward was in seeing the circuit work and the bulb light up! A wicked way of instilling the basic principle of electricity.

The six modules of FS4 start by teaching how to sort into alphabetical order. The section is called Library and shows a pile of books on a library shelf as the graphic illustration (very good). The kid then has to move the books (using a cursor operated by joystick or keyboard arrows, and the two mandatory keys to finalise the move) until they are in alphabetic order.

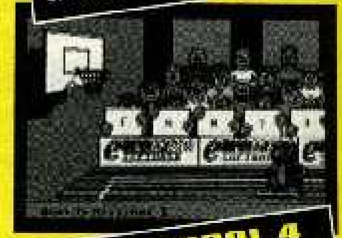
Basketball which is a 'Q and A' section comes next and this uses basketball as the hook. If the little monster gets a question right then Mr Toad throws the ball and scores a basket. If the kid gets it wrong then Mr Toad misses. Doesn't sound much, but the graphics and animation are solid!

The other four parts deal with opposites, arithmetic, recognition and finally typing - which is naff to say the least. All the module does is to ask the kid to press a key on the computer keyboard. When Dennis the Menace does this, a facsimile depicted on the screen highlights the letter pressed. And that's it - unless I missed something!



FUN SCHOOL 3 5-7 YR OLDS

1. JOURNEY
2. COLLECT
3. TOYSHOP
4. ELECTRICITY
5. FUNTEXT
6. TIME



FUN SCHOOL 4 5-7 YR OLDS

1. LIBRARY
2. BASKETBALL
3. SHOPKEEPER
4. LOG CABIN
5. OPPOSITES
6. TYPING

FUN SCHOOL 3 & 4 7-11 YR OLDS

Now we come to the advanced stuff! The FS3 disc has a couple of real goodies, with one module in particular, which kept me entertained for hours. It's called Robot Draw and is an art package of some sophistication. It has a number of familiar features, which we grown-ups have enjoyed for quite some time incorporated into programs such as Art Studio, Stop Press and the like. For example, the module which is based on Logo, allows the user to draw circles, boxes and lines. These can be filled with colours, or shades. A child's creativity can really be unleashed by Robot Draw. My only concern is that it may be a little too sophisticated for this age group. I initially had problems mastering the drawing technique which involves entering numbers to determine the distance a line should be drawn. Unfortunately, this is always going to be a guess and often a second try is needed to complete the move. However, it's still great.

Wordsearch is a word game identical to those found in puzzle books where a grid of letters conceal a number of words. Instead of drawing a ring around the discovered

FUN SCHOOL

solutions, the module requires the child to position an arrow on the first and last letters and then press the <space> bar. This causes the whole word to flash and points are scored for each word found. Great fun!

Planet Maths is a sort of mathematical, space shoot-em-up. It's okay, but not terribly difficult. In fact, the questions seem to have escaped from the under 5s program.

Also pretty simple is the module called Treasure. It teaches familiarity with the four main points of a compass. By following instructions an arrow is moved around the screen until a non-existent treasure is 'found'. This is a bit of a swizz, because completing the series of questions correctly elicits a confirmation that you have found the treasure. But no treasure is forthcoming! Ya boo...

Perhaps the most educational section on this disc is the Sentences module which is a superb method for teaching grammar. Different sentences are put onto the screen and the pupil has to correct them by erasing incorrect words, or letters. One or two were actually quite tricky, but I'm glad to say I was able to score maximum points!

The final module of FS3 is quite a useful looking Database. Unfortunately, I was unable to discover how useful, because each time I tried to load it the computer said, "Error! Press any key". This was a bit pointless as Arnold had crashed and all keys were disabled!

FS4 consisted of five average modules and one anomaly. The anomaly was called Desert Dates and was a real stinker of a history lesson! It consisted of a series of questions asking for significant dates in ancient history. The pupil can select from a multiple choice of five answers. A little man has to be moved over the bricks of a pyramid onto special bricks where dates are inscribed. Once on the chosen brick he hits it with a hammer and if correct the brick slides to one side and a rare gem is revealed. If wrong, the poor little beggar breaks his hammer! Quite good fun, with a reward for correct answers, but I found the questions excruciatingly difficult and managed only a 60% success rate! (I'm much better at geography!)

All five of the other modules were about right for this age group and were comprised of Proportions (how to work them out); Spy Quiz (general knowledge); Exchange Rates (foreign money conversion); Timetable (how to read one - yes, really!) and Travels, which involved moving a pointer across a map of the world. The position of the pointer caused the computer to display its location. This was a little too basic as only continents were listed.



FUN SCHOOL 3
7-11 YR OLDS

1. WORDSEARCH
2. ROBOT DRAW
3. PLANET MATHS
4. TREASURE
5. DATABASE
6. SENTENCES



FUN SCHOOL 4
7-11 YR OLDS

1. PROPORTIONS
2. SPY QUIZ
3. EXCHANGE RATES
4. TIMETABLE
5. TRAVELS
6. DESERT DATES

VERDICT

The general quality of each package was excellent and the programs represent excellent value for money. I'm sure these will be very popular in schools, and even at home. Parents can turn their little terrors loose on Arnold in the sure knowledge that he/she is not only learning something useful, but is taking the first important steps in computer literacy.

DOCUMENTATION	5
EASE OF USE	4
GRAPHICS	5
SUITABILITY	4
SOUND	4
VALUE FOR MONEY	5

OVERALL 90%



SUPERCA

This game was mentioned back in issue one at number 29 in the original top 50. Viewed from above this game pits you against 4, 5 or 6 computer controlled cars. Starting off is like a drive in the country though as you complete each race the opponents get faster and meaner and the next thing you know it's war on the roads so it's time to stock up on some power ups for your car, front & rear missiles, power steering and a Turbo charger for starters. All these goodies will cost you money; money which you're given after coming 3rd or better in a race. Unfortunately as well as buying all these add-ons you'll also need to save up for a better set of wheels. As you progress the other cars will get faster so to keep up with the rest you'll need to click on the shop and select one of the 8 other cars for sale. 128K owners will be able to view the cars, specifications by clicking on the cars on the title screen.

The gameplay is reminiscent of the old classic Super Sprint though this is vastly improved as the screen scrolls in all directions allowing a larger course and larger sprites. The cars are well defined in MODE 1 with some clever graphics, such as the shadow cast over cars going under bridges and an extra four colours on the bottom of the screen showing the cars speed and other statistics.

The tape has two versions of the game, a 64K version and a 128K. The 128K has a tune which plays throughout the game and and extra graphics for the shops and title screen. The actual gameplay and graphics in the game are the same though the 64K version has the disadvantage of being multi-load, as are most games these days.

Super Cars has 27 different tracks, 9 in each of the three classes. Once you have completed all the races in a class you are given a password, this password can be used to bypass any class you have already completed when typed in on the title screen.

For those of you who enjoyed Iron Man Rogers or Super Sprint then Super Cars is a game I thoroughly recommend, especially for 128K owners.





GBH
£3.99





	GRAFIX	SONIX	GAMEPLAY	DIFFICULTY
128k	8	7	8	5
64k	7	3	8	5

CAPTAIN DYNAMO

GRAFIX 7 | SONIX 3 | GAMEPLAY 6 | DIFFICULTY 6 | 69%

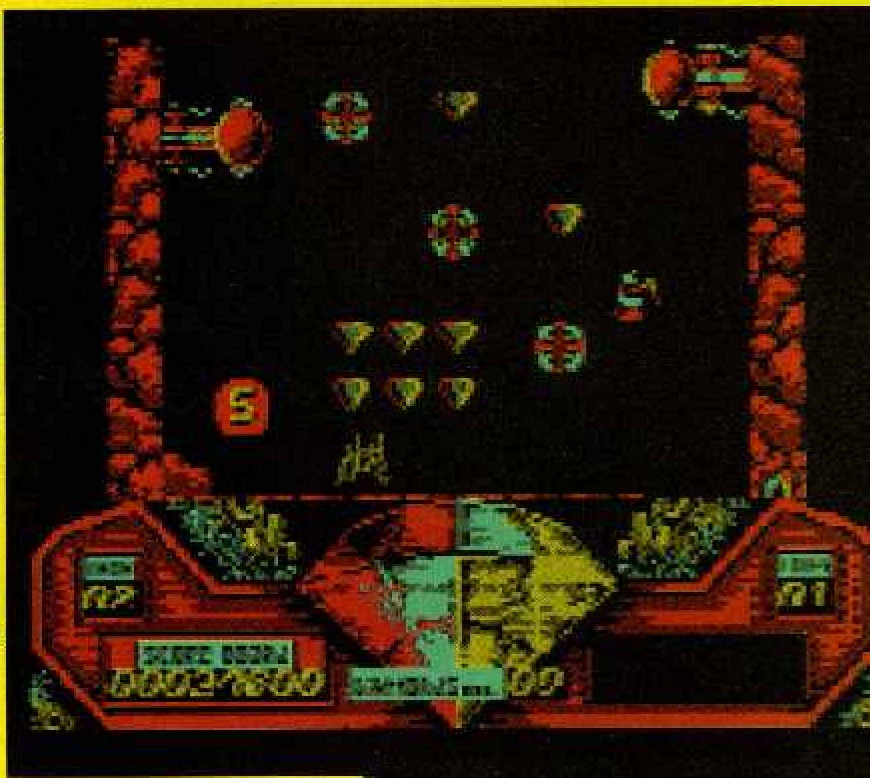
It wasn't long ago we saw the world's youngest super hero, Baby Jo, battling his way onto the CPC scene. We now have the oldest, 75 year-old Ernest P Dynamo called out of retirement to save the world one more time.

Captain Dynamo is basically a vertically scrolling platform game. You start at the bottom of a cavern and jump onward and upward till you reach the top where you step into the teleportation system and away you go to the next level. As you progress through each level you can gain extra points by collecting a number of diamonds which are scattered throughout.

Concealed on each level is a bonus room full of diamonds ready for the taking, mind you they're not as easy to collect as it seems and some well timed jumps will be in order. To stop you reaching the top there are variaty of hazards along the way, these include spikes, water, large plungers which enjoy squashing you as well as living obstacles such as some rather unpleasant spiders, you know the ones with no body and long legs. These creatures can be removed by jumping on them (that seems to be the latest way to get rid of the baddies these days!); the inanimate ones require some quick reactions.

The difficulty of the game is pitched just right so each time you play you get a bit further, though it would have been better with a password system so you didn't have to keep replaying the first few levels, but for those who complete the game there is always the challenge of not only completing it, but collecting all the diamonds as well. Not a task for the faint-hearted. Though Captain Dynamo moves at the pace of a 75 year-old, the way he struts along is brilliant, as is the animation of the spiders.

For your hard earned £3.99 you could do a lot worse that Captain Dynamo, but then again you could do better.







CODEMASTERS
£3.99



SILENT SERV

KIXX • £3.99

Imagine yourself, commander of your own submarine, armed to the teeth with Torpedoes and a 4-inch deck gun, patrolling the South Pacific during World War II and sinking any passing Nazi vessel that strays across your path. Well that's the basic idea of this re-release of Silent Service, once by Microsoft and now on the budget Kixx label. This simulation like others falls into the trap of trying to be as realistic as possible and alienates itself from everyone except submarine pilots.

After you've selected your "Reality levels", which include dud torpedoes, limited visibility and convoy Zig-Zags, you're presented with a world map in which you guide your sub' through into enemy territory. Generally scattered at random will be a few targets, sorry - ships. These can be sunk using either your torpedoes or the deck gun. Sinking the ships via torpedo involves raising the periscope (if you're under water, of course) and aligning the sights and the target in your scope.

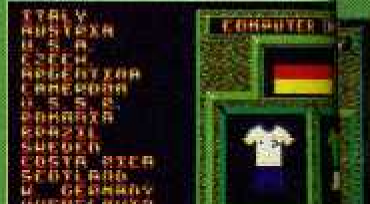
As well as the periscope view you can go onto the bridge, view damage reports, instruments and gauges and also maps and charts. From the bridge a quick surveillance of the surrounding area can be achieved and enemies despatched with the deck gun.

The instruments and gauges give you information on your fuel, speed, battery level and other such vital statistics needed in piloting a submarine.

When a damage report is selected you are presented with a side view of your sub, with the damaged part highlighted. Not to worry though, as not all damage is permanent and can sometimes be repaired.

When originally released on the 16-bit machines, Silent Service went straight to number one and was hailed as the best submarine simulator written (by renowned author Sid Meier). Unfortunately during its conversion to the CPC it has lost the advanced 3-D graphics and speed that made the game excel on the 16-bit micros, with the result that it's far too bland for my liking. Once you've blown up a few subs and inspected the sea bed you'll realise that that's about all there is to the game.

Graphics are poor with only about five different screens within the whole game, sound is virtually non-existent and the gameplay is slower than a knee-capped tortoise!



GRAFIX 3 | SONIX 2 | GAMEPLAY 2 | DIFF…







KIXX • £3.99

GRAFIX	SONIX	GAMEPLAY	DIFFICULTY	
7	7	8	4	79%

There have been many football games programmed for the Amstrad but few have come up to the quality of Italy 1990, re-released under the Kixx label from U.S. Gold. It plays very well, the action is fast, passing is possible (unlike some football sims I could mention) and slide tackling (or should that be hacking the opposition's legs?) is great fun!

On loading, you are presented with the choice of playing "friendlies" (one or two player) or a World Cup. In the background, 128k owners will hear a jolly tune though spot effects throughout the game are pretty nob. If you choose to hack it out in the World Cup, you can pick which country to play, team formation and even the players, as the program has a database of all the players that were in each country's squad in 1990.

"Football is a game of two halves", but that's not so with Italy '90. The game takes place without half-time though the length of a game can be altered. If the match is drawn, a penalty shootout ensues and if still tied, sudden death - a nice touch, but the penalties are too easy to score and save.

There are also other features common to the World Cup; corners, throw-ins, free kicks (when you're ruthlessly fouled by friends!) and some very long goal kicks. As far as getting the ball goes it couldn't be simpler, just run with it to dribble and pass with a quick press on the fire button to pass, with a longer press to shoot. Once the opposition has the ball, you'll need to give them a helping hand to return it to you - nothing that a sliding tackle won't cure!

What sets this game apart from the rest is the speed. No matter how many players are on screen at once Italy 1990 still moves at a tremendous pace, meaning this game will appeal to not only to footballers but also lovers of action games.

An excellent footie sim, but unfortunately let down by its simplicity. Mind you, you can make sure that Argentina don't beat England to the cup again! Even once you've won the World Cup, you'll come back to it, and there's always the two player option if you're after some decent opposition (not that there's any round here!)









A L Y'90

34%



ICE

CY

HIT SQUAD £3.99

The year is 2022. The game is Cyberball, American football with robots five times the size of man built to withstand the violence. Or so the story goes.

The object of the game, for those who've never seen American football, is to get the ball from one end of the pitch to the other by fair means or foul, and in this game it's mostly foul. You control one man out of the seven and must take your part in the scramble for the metal ball which is in fact a timebomb, if a touchdown is not scored in the time it takes for the temperature of the ball to go from cool to critical it will explode, taking a player with it. Each player in a team has its own attributes, the more sleek sprint on ahead and act as receivers while others, whom look more like tanks than cybernoids, act as blockers.



KLAX

HIT SQUAD £3.99



What do you get if you cross Tetris, Connect Four and Arkoniod? The answer is Klax, released when Tetris style puzzle games were in vogue. Klax involves stacking coloured titles in horizontal, vertical and diagonal lines. These tiles roll down a conveyor belt towards your paddle which you must catch them on. Once on your paddle you can drop the tile into one of the five "bins" or flip it back into the air, useful for when the tiles have come down in the order you didn't want them in.

Before each wave you are set a target to complete, this will be anything from thirteen diagonal klaxes to 50,000 points. A klax consists of at least three tiles of the same colour in a horizontal, vertical, diagonal line, or for the adventurous, on certain screens, the "big X" when made will move you on over fifty screens.

For such a simple idea Klax is amazingly addictive. For those of you who like to rush home, break open the tape case and leap straight into a game without reading the instructions first, Klax is a game for you. After your first game you'll find yourself coming back for just one more game because you know that if that final tile was a red one instead of blue you would be on the next wave.

Sound is sparse with no tune but a small jingle is played before each scene and some nice in-game spot effects. The graphics are bold and colourful and the colour for each block is very different, so there is no chance of confusing two shades of blue. Though I must mention that on a green screen monitor the game is almost unplayable as some colours (notably blue, yellow and pink) look too similar to notice until they're on top of each other.

All in all a worthy re-release from Hit Squad.



GRAFIX 7 | SONIX 5 | GAMEPLAY 9 | DIFFICULTY 7 | 84%

(C)YBERBALL

How you and the rest of the team move is decided by choosing from a selection of plays such as Blitz, Suicide (?), Afterburn and Confusion - these are displayed as small pictures consisting of what appear to be blobs and arrows and with a time-limit to choose your play you don't get enough time to decipher the piccy. Once you've chosen your play you get the feeling that you're not doing anything to contribute to the game and that you would have just as much chance of winning if you let the computer play itself!

Cyberball does have its enjoyable moments but unless you're really into American football I wouldn't suggest spending your cash on this one.

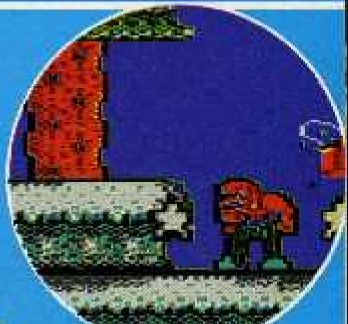


GRAFIX 6 · SONIX 7 · GAMEPLAY 4 · DIFFICULTY 7 · 58%

GRELL & FALLA







CODE MASTERS £3.99

Labelled as the first ever Garden-'em-up Grell and Falla puts you in the position of Gardeners to the Sorcerer. All you must do is beautify his garden and remove the evil curse from all the creatures inhabiting it. Simple.

Well it would be if these creatures didn't eat your newly planted flowers and drain your energy! Though luckily both Grell (The dwarf) and Falla (The fairy) are equipped with magic spells to remove the curses from these creatures and turn them back into the cute fluffy animals they once were.

A range of spells are available to help you do this which can be bought from the shop on each level. As well as spells, flowers and plants must also be bought from here. These are paid for with magic pebbles, which can be collected when you remove the curse from a creature or complete a level. The amount of pebbles Grell & Falla collects at the end of each level is proportional to how much you have improved the garden and how quickly you did it.

Whilst playing the game you can swap between the two main characters at any time. Each have different attributes, Grell, aged 397, is the stronger and is the only one who can buy and plant flowers whereas Falla has the ability to fly and move much faster - very useful when searching for that last frog or gnome.

Each has only one life but has an energy bar which is drained when you touch a cursed creature or water, though a swim spell can be bought to avoid this. Once all your energy has gone the character will lie on the ground for thirty seconds before dying, in which time the surviving character can cast the kiss of life spell and revitalize him or her.

Graphically this game is colourful, though a bit blocky, with large well animated sprites which don't slow down much with many on screen at once. Another success for Codemasters and with 50 different levels should keep anyone happy for a while.

GRAFIX 8 · SONIX 5 · GAMEPLAY 6 · DIFFICULTY 8 · 74%

HITEC £3.99

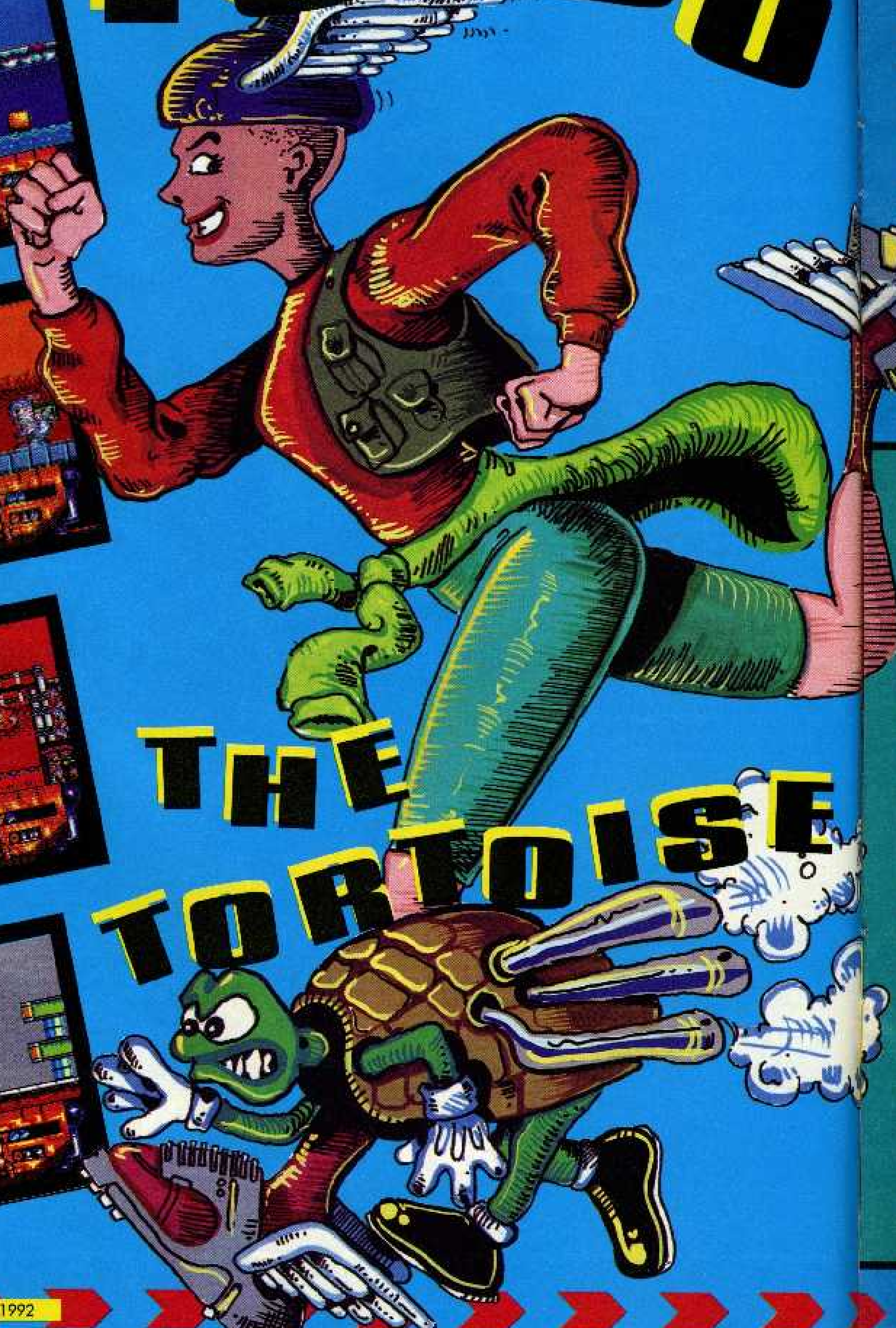
TURBO THE TORTOISE











GRAFIX 8 | SONIX 5 | GAMEPLAY 8 | DIFFICULTY 5 | 81%

Oh dear! Doctor Mulliner's psychopathic assistant has mistakenly activated a 4.75 giga-watt bolt of lightning, destroying Doc Mulliner's prototype in cybernetic technology and electrifying Wal, his pet tortoise. Luckily this large bolt of electricity didn't fry Wal alive, but did in fact give him special powers. Wal, or Turbo as he's now known, is sent back in time to collect the six missing parts destroyed in the explosion.

Starting off on prehistoric Earth he must battle his way through a variety of foe and time zones until the final future zone, by which time all six pieces will have been collected.

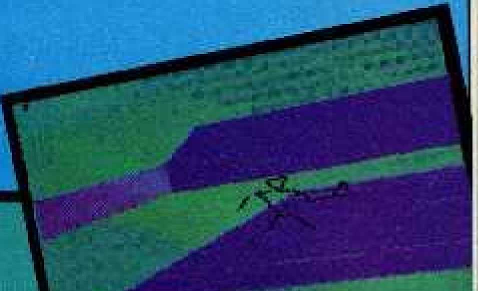
There are six different time zones: prehistoric, Ice age, Egyptian, medieval, 20th century and the future. Each time zone contains different enemies, backdrops and weaponry to pick up. There are plenty of other things to collect too; extra ammo, lives, shields and other special powers. Once in a time zone it won't be long before you're being attacked by Egyptians, killer moles or cute little dinosaurs. These enemies can be bumped off by jumping on or shooting, though some tend to take more than one shot. Generally the cuter they are the tougher they are!

The gameplay is similar to Codemasters Wizard Willy. To complete a level Wal must get to its furthest right point, though this is not as easy as it sounds. Routes are often blocked, there are lakes to cross and spikes to avoid. Some require pretty good timing, but Turbo is responsive to keypresses and easy to control. At the end of each zone you will meet an end-of-level guardian. They all have their own attributes and patterns, so killing these is just a matter of some well-placed shots (assuming you didn't waste them on other enemies earlier on). Once the guardian has been destroyed you collect one of the missing parts and move on through time.

Hidden in each level is a bonus screen in which extra points can be collected in the form of green pods. These bonus screens are hard to find at first, but once you know what you're looking for it's not to difficult at all. As well as hidden bonus screens there are concealed platforms which need to be jumped on to acquire the extra points and powers - very annoying when you can't find them!

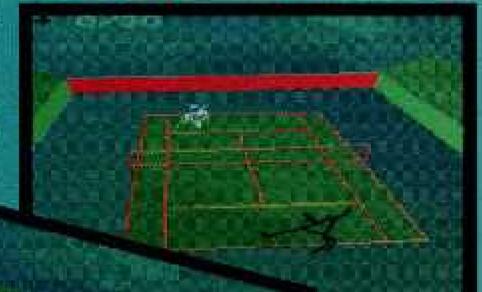
Although the game has excellent spot effects, two things let it down; its lack of a sound track and its simplicity. If you're a hardened games player then this won't last you more than a week, though if you're not and you're looking for a good budget this month, then I suggest Turbo The Tortoise.





INTERNATIONAL 3D TENNIS

GBH
£3.99





International 3D Tennis was a timely release for Wimbledon from GBH. What makes this sim different from any other? Well as you may have gathered from the screen shots and the title it's all drawn in 3D vector graphics. This means all the people do admittingly look like a pair of triangles and some sticks but it also means the match can be viewed any one of nine different camera angles. Impressed? Well you should be because the effect is quite stunning. The initial shock of playing with stick men takes some getting used to, also because the men are transparent, and only one pixel thick come to think of it - (has anyone checked their diet?) It means you can see the ball through them which can completely throw you at times.

As a tennis sim, it's got lots of realistic features. (No virtual strawberries and cream though.) You can choose from loads of different tournaments, including Wimbledon, and you can also decide the surface you play on, clay, grass, concrete or carpet. The level at which you play is also variable. Amateur, Semi-pro, Professional or Ace. Each with its own advantages.

Vector graphics, you either love it or hate it. If you love it and enjoy tennis sims then this is for you, a very clever piece of coding from the original distributors Palace..

GRAFIX 8 | SONIX 5 | GAMEPLAY 6 | DIFFICULTY 6 | 70%

Attack! Top 50 Games Chart

	GAME	COMPANY	CASSETTE PRICE	DISC	RATING
1	LEMMINGS	PSYGNOSIS	£15.99	£19.99	98%
2	PRINCE OF PERSIA	DOMARK	£10.99	£15.31	97%
3	SMASH TV	OCEAN	£10.99	£15.99	96%
4	RICK DANGEROUS	KIXX	£3.99		95%
5	RAINBOW ISLANDS	HIT SQUAD	£3.99		95%
6	TURRICAN II	KIXX	£3.99		94%
7	SWITCHBLADE	GBH	£3.99		94%
8	CONTINENTAL CIRCUS	TRONIX	£3.99		94%
9	THE ADDAMS FAMILY	OCEAN	£10.99	£15.99	94%
10	NORTH & SOUTH	INFOGRAMES	£9.99	£14.99	93%
11	HUDSON HAWK	OCEAN	£10.99	£15.99	93%
12	TURRICAN	KIXX	£3.99		93%
13	TITUS THE FOX	PALACE	£10.99	£15.99	93%
14	KICK OFF 2	ANCO	£10.99	£16.99	93%
15	STRYKER	CODEMASTERS	£3.99		93%
16	WWF WRESTLEMANIA	OCEAN	£10.99	£15.99	92%
17	G-LOC	US GOLD	£10.99	£15.99	92%
18	F-16 COMBAT PILOT	DIGITAL INT.	£6.99	£10.99	92%
19	RBI BASEBALL	DOMARK	£10.99	£17.99	92%
20	IMPOSSAMOLE	GBH	£3.99		92%
21	IK+	HIT SQUAD	£3.99		92%
22	SPACE CRUSADE	GREMLIN	£10.99	£15.99	91%
23	TERMINATOR 2	OCEAN	£10.99	£15.99	91%
24	PLOTTING	OCEAN		£24.99 (cart)	91%
25	MAN.UN TD EUROPE	KRISALIS	£11.99	£16.99	91%
26	OP.THUNDERBOLT	HIT SQUAD	£3.99		91%
27	POWERDRIFT	HIT SQUAD	£3.99		90%
28	CHASE HQ	HIT SQUAD	£3.99		90%
29	PRO TENNIS TOUR	HIT SQUAD	£3.99		90%
30	HEROES OF THE LANCE	KIXX		£3.99	90%
31	SUPERCARS	GREMLIN	£9.99	£14.99	89%
32	STUNT CAR RACER	KIXX	£3.99		89%
33	CASTLE MASTER	HIT SQUAD	£3.99		89%
34	ROBOCOP 2	OCEAN		£24.99 (cart)	89%
35	PUZZNIC	HIT SQUAD	£3.99		88%
36	LICENCE TO KILL	HIT SQUAD	£3.99		88%
37	BATMAN - THE MOVIE	HIT SQUAD	£3.99		88%
38	NAVY MOVES	HIT SQUAD	£3.99		88%
39	LOTUS ESPRIT TURBO CHALLENGE	GBH	£3.99		88%
40	HERO QUEST	GREMLIN	£9.99	£14.99	88%
41	SHADOW WARRIORS	HIT SQUAD	£3.99		88%
42	SIM CITY	INFOGRAMES	£9.99	£14.99	87%
43	ROBOCOP	HIT SQUAD	£3.99		87%
44	NEW ZEALAND STORY	HIT SQUAD	£3.99		87%
45	DRAGON NINJA	HIT SQUAD	£3.99		87%
46	ESCAPE/ROBOT MONSTERS	HIT SQUAD	£3.99		86%
47	GHOSTBUSTERS II	HIT SQUAD	£3.99		86%
48	OUTRUN EUROPA	US GOLD	£11.99	£16.99	86%
49	GAUNTLET II	KIXX	£4.99		86%
50	BARBARIAN 2	OCEAN		£24.99(cart)	86%

GALLUP TOP 10
BUDGET CHARTS

1	NE	FIRST DIVISION MANAGER	CODEMASTERS	£3.99	
2	1	BUBBLE BOBBLE	HIT SQUAD	£3.99	
3	RE	QUATTRO SKILLS	CODEMASTERS	£3.99	
4	5	MAGIC LAND DIZZY	CODEMASTERS	£3.99	
5	NE	DIZZY PANIC	CODEMASTERS	£3.99	30%
6	2	NEW ZEALAND STORY	HIT SQUAD	£3.99	87%
7	6	ROBOCOP	HIT SQUAD	£3.99	87%
8	NE	DOUBLE DRAGON 2	TRONIX	£3.99	
9	RE	DRAGON NINJA	HIT SQUAD	£3.99	
10	RE	BATMAN-THE MOVIE	HIT SQUAD	£3.99	88%

GALLUP TOP 10
FULL PRICE CHARTS

1	2	DIZZY'S EXCELLENT ADVENTURES	CODEMASTERS	£9.99(c)	
2	NE	LEMMINGS	PSYGNOSIS	£15.99(c)	98%
3	1	WWF WRESTLEMANIA	OCEAN	£10.99(c)	92%
4	7	DIZZYCOLLECTION	CODEMASTERS	£9.99(c)	60%
5	RE	BIG BOX	BEAU JOLLY	£16.99(c)	
6	4	CARTOON COLLECTION	CODEMASTERS	£9.99(c)	50%
7	3	TERMINATOR 2	OCEAN	£10.99(c)	91%
8	6	THE SIMPSONS	OCEAN	£10.99(c)	
9	NE	THE ADDAMS FAMILY	OCEAN	£12.99(c)	94%
10	5	SPACE CRUSADE	GREMLIN	£10.99(c)	91%

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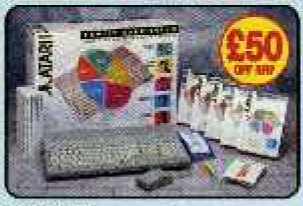


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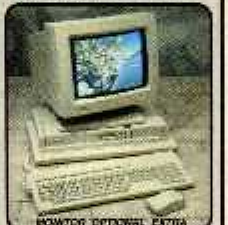
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PRINTOUT



In this special feature, we review the top medium-priced printer and four useful utilities which will allow you to get the most out of any printer

TEST DRIVE

STAR LC24-200

This printer from Star is quite literally print-tastic mate! It's not new, dating back a couple of years now, but it's the best all-round printer that we've seen to date.

There are two versions of this model; one mono, the other colour. There's no difference between the two other than one's colour output ability. The colour model costs an extra £60, so isn't too expensive, but it isn't an optional extra so don't buy the cheaper model thinking that colour can be fitted at a later date. Colour ribbons are more expensive than black ink units, so there is a higher running cost, but the colour model can be fitted with a black ink ribbon when colour is not required - it's a bit wasteful to print large text files in black ink with a colour ribbon!

SMOOTH OPERATOR

The printer looks very classy; well-built and sturdy, certainly not looking its age - it's ergonomic almost as if it was built for the road. It looks better than some of the printers Star have launched more recently.

DOCUMENTATION	✪✪✪✪
FUNCTIONS	✪✪✪✪✪
OUTPUT QUALITY	✪✪✪✪✪
EASE OF USE	✪✪✪✪✪
SPEED	✪✪✪✪✪

RATING 98%

The speed of the machine matches its good looks; in high speed mode the throughput can be as high as 222 Characters Per Second (CPS). In near letter quality (NLQ), however this slows down to a more normal 55.5 CPS. The manufacturers claims are always dubious, but this model is the fastest that we've ever had. At high speeds more mortal printers let off a good old rattle, but the Star wouldn't wake a sleeping baby. A great plus point in most folk's scoring.

PRINTING

In the olden days, to perform colour printing required separate colour ribbons for the printer and it took hours. The Star does it in a quite ingenious way. The ribbon cassette actually contains one ribbon with five colour strips. When a particular colour is required, the ribbon cassette is moved up to the appropriate strip, and then activates the print-head. Using this technique, it is possible to mix colours by overprinting in the same place, with different bands of the ribbon.

For those who print loads of labels and multi-part forms, the Star LC24-200 boasts tractor pull-feed in addition to the more normal push-feed. This allows heaps of fanfold paper to be stored and loaded from beneath the printer.

TYPEFACE

The LC24-200 has the standard set of typefaces, i.e. Pica, Elite, Condensed and Italic but in addition has five superb letter quality fonts, and "special effects", such as Shadow and Outline. All these build up to a host of effects and typefaces that's just about standard issue for modern printers.

One interesting thing I noticed about the printer is that it doesn't have any DIP switches, or at least, not in the conventional sense anyway. It does, however, have "Electronic DIP Switches", which means that all the fiddly DIP switch functions are taken care of by using the front panel control buttons, a lot more convenient than shoving screwdrivers and pens in the back of your printer to change the settings.

CONCLUSION

All in all, it's the best medium price printer on the market. If you have 400 quid or so, kicking about (the way one does!), then get down to your local dealer...and tell them Attack! sent you!

STAR LC24-200 COLOUR
£410 RRP
STAR MICRONICS
0494 471111

STARDUMP

StarDump is written in machine code, and is very professionally presented. The instructions are supplied in the form of a small printed leaflet, about the size of a box of large matches.

Supplied with this utility is a screen from Panic Dizzy by Codemasters, which is a fine example of a medium resolution mode 1 screen. There are so many good things about this program that it would take a whole page to list them, so we'll only deal with the main ones.

The program, like most of Goldmark's utilities, can be run off both A & B drives, but saving is always to drive A. The filing system is remarkably easy to use, with the file to print selected using a highlighted bar. The wonderful thing about StarDump, apart from the print-out quality, is its ability to handle a wide variety of file formats. You can throw Multiface, Spectrum-size, Goldmark, or Advanced Art Studio screens at it without a whimper of complaint.

The printer dump routine is written to work with any Epson-compatible graphic 24-pin printer - and that means just about everything! The dump is also very fast, (one of the fastest I have ever seen in relation to the output quality!), but high quality speedy printing obviously wasn't enough for Goldmark, who have taken the step of incorporating 8-bit printer drivers, not only for their own port, but also 5 other types. These are the KDS v1.2 and 3, the Electric Studio port, as well as the DIY one, and after being asked whether you are using an 8-bit port, your next mission (should you chose to accept it), is to tell it which of the ports you have.

The PLUS range of CPC's are already kitted with an 8-bit printer port, but the firmware is not designed to utilise it. Stardump can however detect PLUS machines and install code to drive the port.

Okay, you are asking yourself, stop going on about it, and tell us how it works. It's quite easy really. There's a number of choices which require either a YES or a NO answer, with other selections listed as choices. The disc in the selected drive is CATalogued, and the picture selected. There is a choice of print size, from 7.11" by 4.44", 8.00" by 5.55", 10.60 by 6.66" to Spectrum size.

The choices of screen type are Standard 17k screen, Advanced Art Studio, Multiface screen, and Goldmark compressed screen. On selecting Standard screen, ink values are prompted for, so that the Grey scales can be correctly matched with the picture. With any other type of screen the ink values are pre-defined in either the screen file itself, or in the case of Advanced Art Studio, by the PALette file saved with the screen. Finally the screen mode is selected, either 0, 1 or 2.

It may sound quite complicated, but in reality, with full menu driven options, Stardump couldn't be easier to use. One word of warning though, it hates ROMs, especially, I suspect, ROMDOS. The disk drive head nearly came out the back of the casing when the ROMs weren't turned off!

This is the best screen dump program available. It may seem rather expensive for what it seems to do, but when you see the quality of the output, by golly! it's worth it.

STARDUMP
GOLDMARK
0707 271529
£14.99

RATING
87%



PRINTOUT

COLOUR DUMP III

MJC SUPPLIES
0462 481166
£15.95

RATING
70%

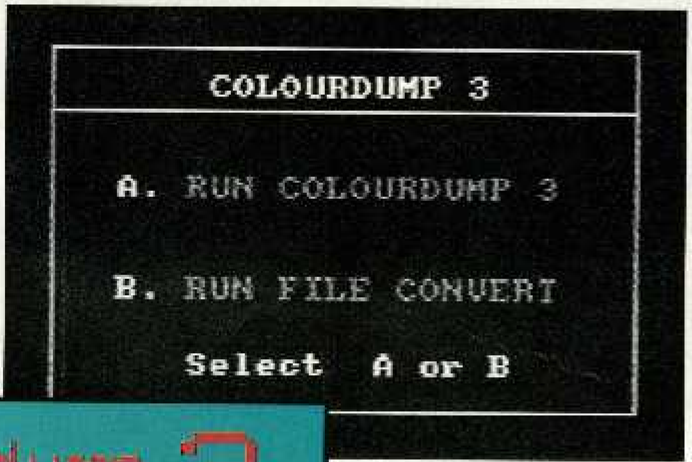
Originally written by Jeff Walker and Alex Aird, the original Colourdump was somewhat revolutionary. Colour print-outs from a humble CPC were unheard of at that time. Well, things have now moved on, and it's time to see whether this revamp is really all it's cracked up to be.

There are two options supplied with ColourDump III. The first of which is the actual Colourcump program, and the second, the Screen Conversion utility. The latter option converts multifaced CPC into a format compatible with Colourdump and when loaded, t displays the MODE, BORDER and INK colours. These must be remembered, as they are required before printing can commence. If the screen is a SPECTRUM-size screen, it cannot be converted and a message highlights this fact. At this point, the converted screen can be saved. The file will be re-saved with the .BIN extension replaced by .SCR and is now ready to be used within Colourdump. Okay, this now takes us back to the main menu.

Selecting option A, "Run Colourdump", will start things off and you'll be asked if you want to print an Advanced Art Studio picture. These are the most simple type of screens to print - in terms of how much the user has to do to produce printed output! Advanced Art Studio saves Palette files with its screen files, and as Colourdump interprets these pallette files, it automatically knows which MODE and INKS the picture contains.

There are, like in StarDump, a number of options to set before printing occurs, such as screen layout, i.e. how you want it to appear on paper. The first concerns printing size with two choices - Large and Small. Single-density printing is faster than double-density, but features less quality. After a few prompts, the screen and colours are loaded into memory, ready to be printed with a single keypress. An interesting point to note, is that if you attempt to load in compressed A.A.S screens, Colourdump will automatically de-compress them. A very nice feature indeed.

Standard screen printing is a bit of a bind, as the screen colours must be input each time the screen is loaded, and in MODE 0 there are 16 numbers





to type in. Stick with the Advanced Art Studio for supplying screens and you'll save yourself an awful lot of aggro.

Printing is expectedly slow, around 15 minutes for a Spectrum size 4-colour screen. The wait was well worth it, because the results are superb.

Although the program does not strictly support 24-pin printers, it does a very good attempt at 9-pin emulation, and although circles suffer from being slightly elliptical the results are still very good.

VERDICT

All in all, and answering the questions posed at the start of this article, Colourdump III is very good. Print quality is very high, although for technical reasons some colours are not reproduced quite as they appear on screen. The only thing that lets this program down is its error trapping. On quite a few occasions during the intial hands-on period, the program bombed-out for no apparent reason. No error messages - nothing. Apart from this, I can thoroughly recommend Colourdump 3 for all your colour printing needs.

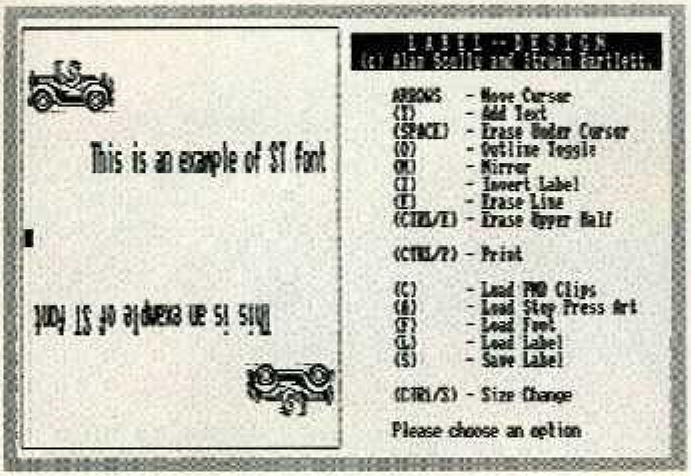
LABEL DESIGN

ALLAN SCULLY
PO BOX 435,
GLASGOW
G12 8SG
£2.50

RATING
65%

Label Design is, surprisingly enough, a printed label designer program. When this proggy landed in the office, first impressions were pretty good. The envelope it arrived in was very slick, as was the disk label.

Okay, let's have a peek. The first thing was to have a look around the disk for all the odd files that kick around, pertaining to the actual program. Easy enough, to get instructions you type 'RUN"MANUAL"'. The actual program is claimed to be written by Alan Scully and Struan Bartlett. True enough, the BASIC part was, and so was some support code, but some of the code is in fact PD. The authors make no secret of this,



and this fact is displayed within the document file.

When run, the program needs to write to the disk, in order to save the current memory settings, otherwise the fonts can get a bit upset. I understand why the memory settings have to be saved, but it would have been more sensible to POKE the values direct into memory and then PEEK them out again when needed.

The loading screen is very average; there's a slogan at the top relating to certain environmental and animal welfare issues. The facts are probably true, but if a younger, more sensitive person were to read them they might get a trifle upset. I understand the need to publicise certain just causes, but a £2.50 Label Maker is NOT the place to do it. To force "facts" about cosmetic testing on rabbits etc. down people's throats every time they run the program is not only single-minded but downright selfish as well.

Anyway, Human Rights lecture over, let's delve into the program.

The screen is divided into several sections. At the left-hand side there is the "design" box, where the layout and, of course, design are implemented. At the bottom right of the screen is a status window, and along the right-hand side is a summary of the keys and their commands.

PageMaker Deluxe, and PowerPage (Stop Press compatible) clip art can be loaded, appearing at the cursor position. After this, one of the supplied Text Fonts can be loaded enabling written information to be added. There are a variety of text format options: Normal, Double Height, Centre, Left positioning, and Right positioning. The printed label outline can be toggled on or off and the program can cope with either 3 or 3.5" disk labels.

Label design itself is quite easy to use as everything is menu driven, and, with a little effort, some very nice results can be produced. The BASIC program does have the appearance of being thrown together somewhat, especially the way the LOAD/SAVE window routine is set up.

The example labels were very good, and if all you have in the world is £2.50 you could do far worse than to buy this program. If you are more adventurous, then you could use a Public Domain DTP program, such as PowerPage which will provide you with more flexibility, and better quality output.

PROTYPE

ARNOR

0733 68909 £30.00

Protype, the printing enhancer from Arnor is a bit of an old chestnut (!) now, but it's still as useful as ever with nothing really competing against it.

Protype is for 128k machines with a disk drive only, and once installed uses less than 350 bytes of the main 64K of RAM. There are seven fonts supplied with the package, and all sorts of effects are available to the user, such as Letter Quality Super, and Sub-Script, Box drawing, and encircle. Also the ability to put accents over letters is incorporated for those foreigners out there...

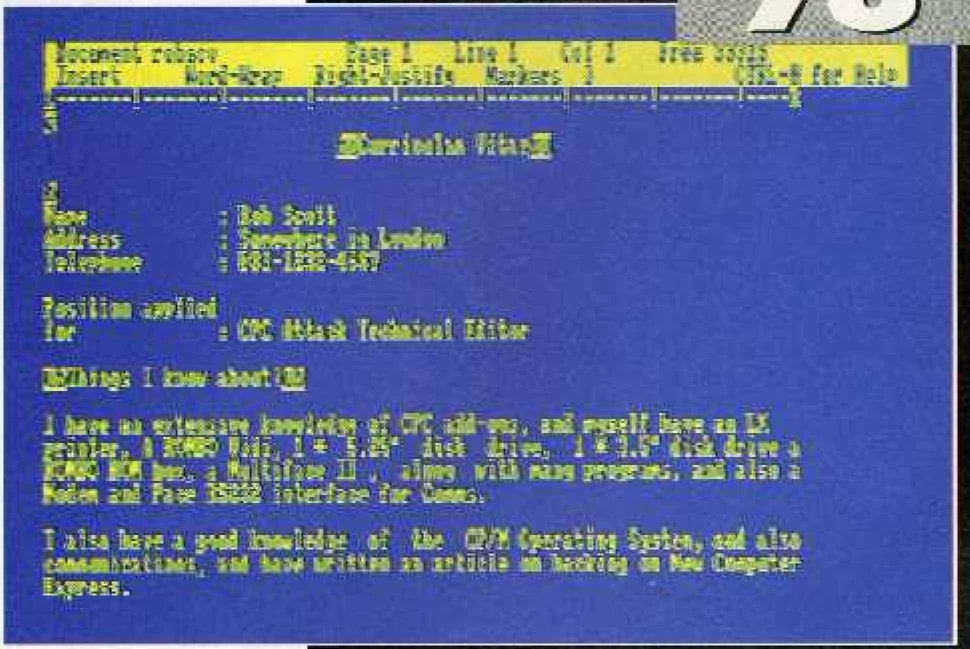
The main disadvantage of Protype is the time it takes to print and the amount of ribbon it uses while doing so. If you intend to print large documents with Protype then stock up on printer ribbons and take the canine for a walk! I also suggest only using good quality printer paper with it, as re-cycled pulp will cause the ink to blur around each letter (spoiling its enhancement completely) and with thin paper the image seeps through to the other side.

Protype is able to print any ASCII file, though for the best effects, PROTEXT is recommended, but that's hardly surprising as it's one of the best word-pro's available anyway. Although, with fairly decent paper and even a very decrepit old DMP 2000 some outstanding results are still possible.

Thirty sobs is a lot to pay for a print enhancer, and if all you use your printer for is writing thank-you letters to Granny for all the crappy socks she keeps giving you, then no, don't bother. If, however, you want a professional look on more important documents, (say you run a PD library), then Protype is extremely useful.

RATING

78%



POKES MAPS & TIPS

Ooer...has Amy got a big one for you this month...

KEY PRESSES

FINAL FIGHT
Press P to pause, then type "run like hell" (with spaces) for infinite lives.

TURTLES 2
Choose a turtle and goto the define keys option. Change them to CHEAT and when asked to confirm your choice press N. Now select the correct controls for infinite credits.

MIDNIGHT RESISTANCE
Hold down RGN on the title screen for infinite lives.

SATAN
The password for part 2 is 01020304.

SUPERCARS
On the start screen type ODIE for class 2, or BIGC for class 3.

DOUBLE DRAGON I+II
Press Del to pause, then type in "run like hell" (with spaces) for infinite lives.

ADVANCED PINBALL SIMULATOR
Press P to pause, type HENLEY. You can now control the ball with keys X,C and J.

BONANZA BROS
Pause the game and press F1 to skip levels.



NEBULUS
While you are playing hold down SHIFT and a number from 1 to 8. You'll be transported to the level with infinite lives and time.

TURRICAN 2
Enter your name as WIMPON in the high score table. When playing the game, press CTRL to skip levels.

AMC
Type your name as "creep" for infinite lives.

NEW ZEALAND STORY
Press FLUFFY on the title screen slowly for infinite lives. When playing, press RETURN to skip levels.

SCOOBY DOO & SCRAPPY DOO
Press CHEAT on the title screen for infinite lives.

THUNDER-BIRDS
The passwords are RECOVERY, ALOYSIUS, ANDERSON for levels 2, 3 and 4 respectively.

HONG KONG PHOOEY
For infinite energy, hold down keys THUGI on the options table.

SIM CITY
Hold down FUNDS for extra money. Don't do it too many times as you'll have an earthquake to deal with!

BATMAN THE MOVIE
Hold the keys ED209 to move on a level.





CORRESPONDENCE

Attack! REQUESTS

SMASH TV [SE1]
Has anyone got a tape poke for Smash TV?

SPELLBOUND DIZZY [SE2]
Can anyone help me with this game? I can free Grandad and Dylon and can get 21 stars, but I can't get the honey from the bees or get through one crusher down the windy shaft.

If you can help with any request, please write in and help out.

Keep 'em coming to:
AMY'S PM&T,
CPC ATTACK!,
HHL Publishing,
Greater London House,
Hampstead Road,
London NW1 7QQ
or fax: 071-387 9518

TIPS

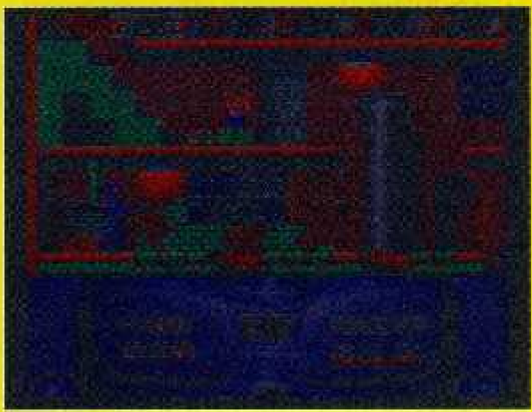
YIE-AR-KUNG-FU
Lure your opponent into a corner. Jump straight up. When you land, they should be trapped in a corner for your disposal.

HARD DRIVIN'
Taking the stunt track, drive up the big bridge slowly and brake at the top. You should roll down the bridge, gaining points as you go.

MULTIFACE POKES

AFTERBURNER (T)	20A7	3A	infinite lives
CHASE HQ (T)	2074	00	infinite time
	3872	00	infinite turbo
COMBAT ZONE (T)	05FE	00	infinite lives
DOMINATOR	09A4	FF	255 lives
DRAGON NINJA (T)	13C0	00	infinite time
	1D54	00	infinite energy
FINAL FIGHT (T)	1F31	XX	XX credits
	1F36	XX	XX lives (player 1)
	1F37	XX	XX lives (player 2)
GUNBOAT (T)	7CB0	C9	immunity
OP THUNDERBOLT (T)	CF62	00	infinite life
OP WOLF (T)	2C81	A7	infinite lives
PAPERBOY (T)	05AC	00	infinite lives
ROBOCOP (T)	3F23	00	infinite energy
SHINOBI (T)	0F62	00	???...Try it!!!
STRIKE FORCE COBRA (T)	694F	00	infinite time
THE ADDAMS FAMILY (T/D)	12FA	C3	infinite lives
TOP CAT (T)	7C09	30	stops clock
VINDICATOR (T)	05B4	A7	infinite lives - level 1
	0BD9	A7	infinite oxygen - level 1
	1D21	A7	infinite lives - level 2
	12F9	A7	infinite lives - level 3
	060E	00	infinite time - level 3.1
	0815	00	infinite time - level 3.2
WEC LE MANS (T)	1345	00	infinite time

THIS MONTH, the prize winner is Jason Levett from Stoke-on-Trent. Contact me, Jason, and I'll see how I can sort you out.


ROBOCOP

...(fweep, fweep!)

RAINBOW ISLANDS

Now for the last island: Dragon. Can you take the suspense? Don't think about it.

[7] DRAGON ISLAND

7.1 Ignore the knight on the right, concentrate on the fire-breathing dragon above. Dodge the first fireball, then run into the corner. The dragon follows, and you transfix it with your trusty rainbow. Do not run first, or you'll be trapped in the corner and fried.

Now get the knight before moving to the platform at the top left. Here, another knight jogs towards you; into a rainbow.

Now you find out where the thugs wot got us kicked out of the European Cup got to. There's one, kicking spiked footballs about. Go to the platform opposite, block the footballs with rainbows, bridge over him, and drop the bridge on him. Now go for his bruvver.

Mount the platform below the thug, wait until he passed, hop and shoot him in the back.

The pillars with pink puddings and knights on have a dragon above. Jump on the far left pillar and zap the knight. The dragon now draws level with you, so hit him.

Another dragon comes from the left. Bridge-build over to the far right and surround yourself with rainbows. Then, when the dragon is level, shoot. The knight falls in time while you're waiting for the dragon.

Two dragons down, head for the left of that 'n'-shaped platform. A knight will come down, and you are waiting for him. When you move, another comes down. Jump over your rainbow and get him too; you're now clear to the level two marker.

Bridge-build to upper left, backtracking as you see the dragon. Pivot on one of the islands and take him out. Bridge-build to the right again, and you'll trap a dragon. Drop the bridge on him while you get the knight.

There's three skinny platforms and a fat one on top of you. Go for the fat one, pop up a rainbow, and stand on it to blast the thug. Bridge-build up and through the other thug.

To deal with the two knights above, stand on the left of the right-hand platform. They'll both come to you.

Two more very stupid knights block the way to the level three marker. Bridge-build between the two, and zap left and right.

Now aim for the far right of the three platforms where you shoot the knight as he drops into the gap. Stand on the rainbow and zap the thugs to the sides.

It's dragon time again! Go for the left side, and jump to hit the dragons just after they've fired the first salvo.

Time is starting to run out now, but do not tread on either of the top two stepping-stones. Do that and a knight drops on your noggin. Bridge-build to the top right instead, getting the knight from behind.

Leap the two little stones to the centre platform to surprise and rainbow two dragons. Just fire before they do...

Clearing the thugs is easy: Build up underneath the first and clip him. The second you dodge; just go for the top and collect your winnings.

Blobs Your Uncle

7.2 See those green slug-like blobs coming for you? Oh dear, you just lost a life. Zap 'em or jump onto the left-hand platform.

Stand on a rainbow, and clip the knight to get his burgers. Another comes down shortly, but you've plenty of room for manoeuvre.

Now deal with two fire-breathing knights by bridge-building under one, clipping him, and killing the other by frontal assault. Beware the green goo that drops down here.

To pass the next knight and dodge the goo, jump onto the left-land platform, jump up and zap the knight. Don't worry, he won't spit fire at you, so go for the centre, jumping up to hit the knight on the right.

Bridge to the centre avoiding a knight, and kill him as he dances towards you. Get his friend as you travel past him.

Leap up behind the knight atop the long, flat platform and blast. Two fire-breathers should drop down the gap, but may need chasing.

Traverse the empty screen next to the next thug. Build a bridge through him and the knight above. Don't bother getting the knight, hit one of the yellow stars above him. That'll do, and it might get the blobs at the same time.

On top of that lot are four knights; two hot and spicy, two plain. Bridge right through the middle of them, dropping rainbow bits on the survivors. Sounds hairy, but it works.

Move to the left of centre and upwards, clipping the thug wiv a rainbow. Down come two blobs, one of them has heavy duty, kill everything jumps in it. Get 'em, because its the only chance you've got to blast through to the next level.

ISLAND [7]



The Penultimate Platform

7 . 3 Round 27 starts off by dropping more goo on you. What do they think this is, Noel Edmunds' House Party?

Ghosts drift around the screen willy-nilly and shooting them will be left as an exercise to the reader.

Zap the blob and stand on the rainbow. A second blob comes along which you can hit or dodge. Jump onto the right side of the 'T'-shaped platform, and spread spectra over the dragon on the left. Now take out the knight by standing on a rainbow and clipping him.

Build rainbows up to the left now, where you'll be able to clip a thug, and go to the gap. To the left of it is a thug, above are two dragons, and flitting about somewhere is a ghost. Build bridges to the edge of the right-hand platform to shooting the thug there, and jump onto the far right platform to hit the first dragon. The second one will try to come after you, but will hit rainbows. Move up firing; you'll either hit it directly, or dump rainbow bits on it.

If you're really lucky, there is a cheat. The thug turns into a kill-all star. The luck is needed to make it land within reach.

Above the screen wide platform are two more thugs. Stand on a rainbow to shoot these and collapse your bridge to pick up the goodies on the ground.

Above you are a ghost and a couple of knights. Pick the first knight by standing on the platform below it, leaping, and shooting him.

Steer clear of the second knight. Two dragons and a spook drop down when you go anywhere near him.

Jump up between the dragons (stay still and the ghost gets you) and hit one on the hop. As you fall, the second dragon will miss you. Leap up and blast him.

Get the thug by clipping him from a rainbow on one of the small platforms, or leap and blast him from behind. Hop to the left-hand platform with three spare ribs on, build a rainbow to stand on, and get the knight. Hop to the central platform, firing as you go. Jump high to kill the second knight. Bounce on the central platform, and plug a thug.

Just past the three hamburgers, are two more dragons. Stay central and treat as per the last dragon duet.

Jump and fire left to get the next knight, and clip the thug at the very top of a jump.

Look out for drops of goo by the level three marker from the right-hand platforms. As you pass, don't go through the gap. When past, two dragons fall in on you, so stay central - your well practised dragon-slaughtering routine. Don't jump into the thug above, and let him get caught in the crossfire.

The top thug you take out by bouncing on the platform on his lower left, and firing at the top of your bounce.

Jump onto the platform at the lower left of the next thug, and stand on a rainbow. When you've clipped the thug, stand on the rainbow and build up to the knight.

When you're close to the knight, hit him. Watch what happens to the fish, which is one of those lethal stars. Use this to put out the next dragon.

Don't linger under the long platform, or the dragons get you. Jump up behind the thug and get him. Bounce and hit the dragon and knight on the left. Do not leave this rainbow touching the ground, or it will stop you running away from the right-hand dragon. Keep your back to the left wall to hit the dragon and his fireballs before dashing for home.

Last Level

7 . 4 Level 28, the final frontier. Your five-round mission to explore strange new levels, to boldly go where no joystick addict has gone before!

Build a rainbow and stand on it to get the dragon, then collapse rainbows onto the drips before hopping up a couple of platforms. Move it!

Build a bridge between the knight and the thug. Stand on this to get them, but watch for the knight and a ghost up there.

Steer clear of the right-hand side on your way up to kill the dragon; green goo drips down there.

If you go straight up the centre, zap the knight on the left as soon as you see him and he won't have time to throw a fireball at you. Honest. He turns into a yellow star, so watch where his fish goes. Shoot the thug in the back as you move up to the level two marker.

Come up off the rightmost of the two platforms on the left, and come up firing at the dragon hiding there. There's a knight and a ghost too, to take care of in your own style.

Keep going up the centre, bouncing on the left platform to hit the knight. Jump up again to get the dragon, and collapse rainbows on surviving knights. Shoot right to take out the thug, and that's a whole screen cleared.

Tip for the forthcoming screen. See the narrow gap with the wee platform below it? There's a red star hidden just on the left of the gap, but it doesn't last long. Fire left as soon as you jump through the gap, and you'll hit a knight and a ghost.

This leaves one roaming knight, and a knight with a side-helping of thug on a platform slightly to the left of centre. Aim for the platform below and to the left of it. Fire rainbows from there.

Stay to the left, to avoid goo. This means you have to trek to the right again to get the thug, but it's worth it.

Get on the platform below the fire-breathing knight, stand on a rainbow, and zap the thug. Then leap up behind the knight to kill him. Make for the right edge for a clear shot at the dragon.

Build a bridge over to the thug, and wait until he heaves one of his balls. Then run up and blast him.

Leap onto the next platform towards the centre and be prepared to zap goo coming from the left. Stand on the rainbow to hit a knight and make for the small platform towards the middle.

Bounce on this to hit the knight and thug above. More goo on the right, so leap to the stub of a platform on the left.

Move upward and in, aiming for the tiny platform towards the right. Fire rainbows as you go, and you'll wipe out the thug. There's a lot of goo from here on, so keep your eyes peeled.

Go for the narrow, central platform. Build bridges to get the knight, bounce off the rainbows onto the platform above the one you started from, and zap the thug to the right.

You're getting close now, and the knights are travelling in threes for protection. Leap bravely in from the left, rainbows flying. You'll clear the lot out and wahay! You've done it! Almost.

Enter The Dragon

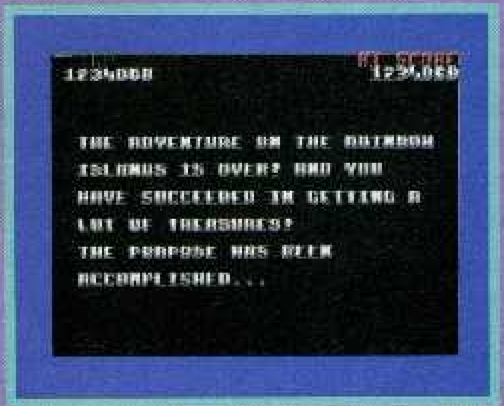
It has to be said, it's the most feeble dragon I've ever met, but it still spits great balls of fire.

Build protective walls and move strategically. Translation: Fire rainbows by the skip-full and run like hell!

One final tip: don't think you're safe behind him, as his fireballs come from unconventional orifices.

Ding! 100,000 points and time to crack open the champagne.

Now, if you're a real glutton for punishment, you go through it all again. But that's for the birds and besides, my champagne is going flat.



If you've got a blockbuster of a game solution, send it in to Complete Control. You never know, you might get one of our famous blatant bribes.

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Put your favourite machine code/Basic programs onto rom with our powerful Eprom Programmer. Features include: program 8k and 16k; 21 volt and 12.5 volt eproms; rom to rom copying; single byte, block and full eprom programming; rom editing and verification; fully menu driven; ejector rom socket. Supplied with software to turn a Basic program into a file suitable for running from rom and a PD games rom file – ready for blowing.

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ATT 9

Attack! TUTORIAL

ELEMENTARY BASIC

Part 4

This month we go totally loopy explaining how the FOR and NEXTs are used

The computer is a machine which carries out repetitious work. When you switch on your CPC the main component of the computer, the CPU (Central Processing Unit), has certain tasks to do, make contact with the keyboard, produce a screen display, handle the tape or disc drive and control output to the printer. To carry out all these operations a program called the "Operating System" is used. The operating system program carries out these tasks by using a series of loops, a loop being a part of the program which is repeated.

When writing programs in any language loops are used to reduce the amount of code. A loop can be fixed to produce exactly the same effect each time it is used or variables can change within the loop giving a new outcome.

LOOPS IN BASIC

The BASIC language provides several ways of producing loops and these are designed to make good program readability, that is a clear understanding of what the loop achieves within the program when reading the program listing.

The BASIC provided with the CPC provides two ways of producing loops, the FOR - NEXT loop and the WHILE - WEND loop, both systems describe what is going to happen at the start of the loop.

The FOR - NEXT loop

The FOR - NEXT loop is standard in all BASICs, it starts with the keyword FOR and ends with the keyword NEXT. When you encounter a FOR - NEXT loop you can read exactly what function the loop is designed for by reading the information immediately after the FOR statement, as below.

```
100 FOR loopcounter=1 TO 100
STEP 2
```

This line means set the variable "loopcounter" initially to 1 and enter the loop, carry out any operations within the loop until the line with NEXT loopcounter is reached where the program flow is returned back to line 100. The second time in the loop the variable "loopcounter" has the STEP size added and then it is checked to see if it is greater than 100, as the variable "loopcounter" is only 3 the loop is entered again and this continues until "loopcounter" is 101 when the program flow is sent to the statement immediately after the NEXT loopcounter statement, the loop is complete. The experienced programmer reads the FOR statement as.

```
100 FOR
loopvariable=startnumber TO
finishnumber STEP
incrementsize
```

Here is an example of a simple counter:

```
10 REM Counter loop
20 FOR count=1 TO 1000 STEP 1
30 PRINT count:REM Print out
the loop variable
40 NEXT count
50 END
```

The only operation within the loop is to display the loop variable at line 30 (PRINT count). The result is a scrolling screen display which counts from 1 to 1000 in 1s, i.e. 1 2 3 4 up to 1000.

STEP increment

The increment can be any number, decimal number and can be positive or negative. Great care must be taken when selecting a Step increment to ensure that the amount is correct, eg. Change the line 20 above to

```
20 FOR count=1 TO 1000 STEP 1
```

If you now run the new program the screen will display the number 1 and then the loop will be complete, the loop is working correctly but because of a slight error we have asked the loop to count down.The first time in the loop no checks are made and the loop entered with "count" as 1 and then the second time around the loop, "count" has 1 removed from it's value making it zero and then this is checked against 1000. Zero is less than 1000 and therefore the loop is complete. When writing large programs small errors like these can cause incorrect results and are difficult to locate because they do not stop the program working.

```
20 FOR count=1000 TO 1
STEP -1
```

Try also a decimal Step decrement, i.e. STEP - 0.25

STEP missing

You will see in many listing's FOR - NEXT loops with the STEP keyword missing this is a short hand method which means a Step increment of 1.

```
NEW
10 REM Short pause
20 FOR pause=1 TO
2000:NEXT pause
```

This is a loop without a step increment (it will be 1) and with no operation being carried out within the loop. All the loop achieves is a delay while the loop counts up to 2000.

NEXT



In some listings you may see a NEXT statement without a loop counter variable this again is a short cut and the loop will work perfectly well without the variable name. For readability of the listing it is best to include the variable name.

MAKING USE OF FOR - NEXT LOOPS

Question 1: Your rich uncle offers you a deal, you must choose either **A.** or **B.**

A. A cheque for one million pounds.

B. A one pound deposit in a bank and each day he will double what he gave you the previous day, for a period of 21 days.

Answer: The cheque for one million pound is obvious, but how much will you have if you choose B. This is an ideal task for a FOR - NEXT loop as below.

Variables

days The loop counter
invest The amount invested
uncle The amount he gives you each day

```
10 REM Answer to Question B.
20 uncle=1:REM Start at one pound
30 FOR days=1 TO 21:REM No need for step as 1 will be added
40 invest=invest+uncle:REM Add amount uncle gives to the total (invest)
50 uncle=uncle*2:REM Double Uncle's contribution
60 NEXT days
70 PRINT "You will have ";invest;" pounds after 21 Days"
80 END
```

So which one would you choose!

Nested Loops

You can have a series of loops working within other loops, this is known as nested loops. The simplest form of nested loop is a pause within a loop as the example below.

```
NEW
10 REM Display 100 *s with a slight delay between each one.
20 FOR star=1 TO 100:REM Loop one hundred times
30 PRINT "*";:REM Print a * and keep the cursor on the same line
40 FOR pause=1 TO 20:REM A short Pause
50 NEXT pause
60 NEXT star
70 END
```

The loop from line 40 to 50 is nested within the main loop from line 20 to 60. You are not limited to the amount of loops which run inside other loops but each internal loop must end with its own Next statement before the external loop ends.

WHILE - WEND loops

The second type of loop available is the WHILE - WEND loop. This loop is mainly used when you are not sure of how many times the loop is to be used. The syntax is:

```
WHILE condition
Operations
WEND
```

The first line of a While - Wend loop must contain the condition for the loop to be used, the loop will only be used if the condition is met. The last line the WEND (While END) sends the program flow back to the WHILE statement similar to the NEXT statement.

Conditions

You can place any condition after the While statement, you can also have more than one condition that must be met. Conditions can be numeric or strings, as below.

Mathematical Operators

=	Equals	eg. A=B	A Equals B
>	Greater Than	eg. A>B	A is Greater Than B
<	Less Than	eg. A<B	A is Less Than B
<>	Less Than or Greater Than	eg. A<>B	A does not equal B
OR	Take either	eg. A=12 OR B=3	Either will do
AND	Both	eg. A=12 AND B=3	Both must be correct

Typical Numeric Conditions

a=20
score<1000
highscore>2000
x=200 AND y=100
random<>12

Typical String Conditions

k$=""
answer$="YES"

Here is a loop which chooses and displays a random number, the loop will continue until the random number is equal to the loop condition (random=10)

```
NEW
10 REM Example of a loop where the amount of times the loop will be used is not known
20 CLS
30 WHILE random<>10:REM Condition - The variable (random) does not equal 10
40 random=INT(RND(1)*1000):REM Choose a random whole number up to 1000
50 PRINT "The random number is ";random
60 WEND:REM Send the flow back to line 30
```

Each time you run this program it will display a different amount of random numbers until the number 10 is chosen.

WAITING FOR A KEYPRESS

It is often necessary within a program to wait until a key has been pressed. A screen full of information could be read and when completed, a key pressed to display the next screen, this allows the user to read at their own pace, only moving on to the next piece of information when they are ready. This is achieved simply using a WHILE - WEND loop as below.

```
NEW
10 REM Wait for a keypress
20 MODE 0
30 LOCATE 4,24:PRINT "Press any key"
40 k$="":WHILE k$="":k$=INKEY$:NEXT k$:REM Note the inverted commas "" are next to each other. i.e. k$=No string
50 MODE 1:PRINT "You pressed the ";k$;" key"
60 END
```

Line 40 is the keypress routine, the keyword INKEY$ scans the keyboard and if a key is pressed sets k$ to equal that key. This check takes about 1/100th of a second and if a key is not pressed k$ will equal a null string (""). The loop continues while K$ is a null string, if k$ equals a key the loop is completed and line 50 entered.

Here to finish is an example of nested loops to produce a circle display. The circle positions are calculated using trigonometry. The outside loop changes the radius of the circle and the inside loop produces the circle.

```
10 REM Circles.
20 MODE 0:REM 16 Colour Mode
30 PAPER 5:CLS:c=13:REM Black background. The variable c is the colour, the first colour will be 14 (Yellow/Blue flashing)
40 FOR radius=40 TO 320 STEP 4:REM the variable (radius) equals the radius in pixels
50 MOVE 320+(radius*SIN(-PI)),200+(radius*COS(-PI)):REM Move to the start position
60 c=(c+1) MOD 15:REM Change colour variable
70 FOR circle=-PI TO PI STEP PI/32:REM A Circle made with 64 sides
80 DRAW 320+(radius*SIN(circle)),200+(radius*COS(circle)),c:REM Draw the arc to produce the circle
90 NEXT circle:REM Inner Loop
100 NEXT radius:REM Outer Loop
110 PAPER 0:REM Change back to blue background, if you stop the program before it finishes enter PAPER 0 to change the background back to normal.
120 END
```

Variables used

FOR	Start of a For - Next loop
STEP	Increment or decrement
NEXT	End of a For - Next loop
WHILE	Start of a While - Wend loop
WEND	The End of a While - Wend loop (While END)
INT	Whole Number (INTeger)
RND	RaNDom number between 0 and 1
INKEY$	Scan the keyboard

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ADVANCED BASIC

Part 4

Attack! TUTORIAL

This series ends with an in-depth look at error trapping and file protection



Trapping Errors

One of the most useful features of BASIC is its ability to report when errors occur. As you are writing a program the message "Syntax Error" or "Redo from Start" can point out errors as and when they occur. When an error message is displayed the program is automatically stopped for you to correct the error.

As a user of the final program you do not want to see these messages, it may mean you have lost all your work. If you are using a drawing package and have just completed a masterpiece on the full screen and then press the key to save the screen display to tape, the message "Press Record and Play and another key" is displayed on screen. This message, although not an error message, may scroll the screen so you lose the top of your drawing and probably your temper. Messages such as these must be stopped from scrolling the screen or trapped and not displayed at all.

Confining Messages

The tape message is a useful message which can be used within programs, provided the message is confined to a certain position on the screen which will not allow the whole screen to scroll. All messages from the operating system are displayed in Window #0, therefore an easy way to confine these messages is to use alternate windows for the main program and have a message window #0 as below.

```
10 REM Demonstration of screen scroll when a tape message is displayed.
20 MODE 1
30 PRINT "This line will scroll off the screen"
40 FOR star=1 TO 23:PRINT "*":NEXT star
50 |TAPE:REM If you have a tape only machine leave this line out.
60 OPENOUT "filename":REM Open a file and save 300 items
70 FOR file=1 TO 300
80 PRINT #9,"testing"
90 NEXT file
100 CLOSEOUT
110 END
```

```
10 REM Using windows to confine error messages
20 MODE 1
30 WINDOW #0,1,40,24,25:REM Window #0 2 lines at the bottom of the screen
40 WINDOW #1,1,40,1,25:REM Window #1 the full screen
50 PRINT "This line is now safe from scrolling"
60 FOR star=1 TO 23:PRINT "*":NEXT star
70 |TAPE:REM remove if using tape machine
80 OPENOUT "filename"
90 FOR file=1 TO 300
100 PRINT #9,"testing"
110 NEXT file
120 CLOSEOUT
130 END
```

When you run either of these programs a message will be displayed on the screen asking you to Press Record and Play and another key. To test the programs and the effect it is not necessary to have a tape in the recorder or to press Record and Play.

The second program will leave you with the windows still set up, change the Mode to bring the screen back to normal. (MODE 1)

NOTE Window #0 which will receive any message from the operating system must be at least two lines high. If a one line window #0 is chosen any operating system message will scroll that one line leaving the window blank.

Error Messages

The messages that the computer's operating system supplies are restricted and in most cases the user requires more information. Provided you can stop these messages being displayed you can discover the fault or request and then display your own message.

Disc and Tape Errors

A number of error messages are available when saving or loading, using discs or tape and these can be trapped. To save space in the operating system these errors are represented by a number. To trap these codes BASIC provides the statement

ON ERROR GOTO 1000

This statement means that if there is a fault anywhere within your program the routine

A TYPICAL DISC HANDLING ROUTINE

```
100 ON ERROR GOTO 1000:
REM Error Trap
110 CLS
200 GOSUB 500:REM filesave
300 END
500 errtest=0:OPENIN "errtrap"
510 IF errtest=1 THEN
errtest=0:LOCATE 1,12:PRINT "The
error has been trapped at line
510":CLOSEIN:RETURN:REM Do not
allow the program to continue. Return
to the place called.
515 INPUT #9,file$
520 CLOSEIN
530 RETURN
1000 REM Error trap
1010 errtest=1
1020 IF ERR>30 THEN errmess$="Disc
Error":REM If a error message greater
than 30 is produced it will probably be
a disc error.
1030 IF ERR=25 THEN errmess$="You
are trying to load the wrong file"
1040 IF ERR=27 THEN errmess$="This
file has not been closed"
1050 LOCATE (40-
LEN(errmess$))/2,24:PRINT
errmess$;:REM Print the error message
1060 FOR pause=1 TO 2000:
NEXT:REM A short pause
1070 CLOSEIN:CLOSEOUT:REM close
both input and output as either could
be open.
1080 RESUME NEXT
```

When you have typed in the above listing save the program as "ERRTRAP"

SAVE "ERRTRAP"

When the program is "Run" it will attempt to load in this listing and an error message will be generated and displayed. The error trap routine is used and the variable "errtest" will be set to 1, when the error trap routine is complete the IF/THEN on line 510 will be used and the program can be re-set or the user asked to rectify the error. If you now save the listing as an ASCII file and then run the program, no error messages are generated; an ASCII file is the correct file i.e.

```
SAVE "ERRTRAP",A
RUN
```

starting at line 1000 will be used. Most versions of BASIC provide and ON ERROR GOSUB 1000, which means that once the error has been trapped the program continues from the next statement if possible. This returning to the position of the error is vital if you wish to trap the error and then continue once the error has been corrected. With the CPC BASIC however the last line of the error message routine should contain the keywords RESUME NEXT to produce the same effect as a sub-routine.

When an error has been trapped you need to discover what the error is, ask the user to correct the error and set up a flag to indicate that the error routine has been used. The next statement after the error has occurred checks to see if the error routine flag is set and, if so, takes corrective action.

IN / OUT

The parts of the program where error messages are likely to happen are during input or output as below.

Keyboard Input
Write your own input routine.
Disc and Tape
Use ON ERROR GOTO
Tape Messages
Use WINDOW #0
Printer
Check if printer is available.
See Printer errors

THE PRINTER

If you send information out to the printer port and no printer is connected the program will stop and wait until it gets a signal from the printer. As there is no printer connected the signal from the printer never arrives and the program is locked. The only action would be to connect a printer, if you had one, or to switch off. The secret of a professional program is that the program never loses control. Unfortunately Locomotive BASIC as supplied on the CPC does not supply a way of ascertaining if the printer is connected. You could ask the user if a printer was available every time they selected the print out option but this is not foolproof. However there is an answer to this problem and that is to use the operating system, the memory location & is used by the operating system to detect if a printer is on-line or not. You can check this location using PEEK as below.

```
1000 REM Printer Test Sub-
routine
1010 ready=INP(&F500) AND
64:REM Test the Parallel port
1020 IF ready THEN PRINT
"Printer Not Connected or
On-Line":RETURN:REM
return to the main program
without attempting to print
1030 REM Place your print
out routine below here, if the
printer is not connected line
1020 will return the flow
before these lines are used.
1200 RETURN
```

Accidental Stopping of a program

If the user accidentally presses ESC when the program is running this could stop the program losing all the data. To prevent this happening you can simply redefine the ESC key to represent another key using KEY DEF.

KEY DEF 66,1,32

This will make the ESC key (66) produce a space (Space bar 32) and therefore will not allow the user to break out of the program.

Preventing Access to your Code

When you have written the final code and wish to protect that code from prying eyes you can save the program in protected form, i.e.

SAVE "filename",p

This will prevent listing of your program and some protection although there are a good number of programs which will remove this protection.

Soft Re-Booting

If you are writing a database program which opens a file at the start of a session and closes the file when the user has selected to leave the program, you must stop the action of the Soft re-boot. (CTRL + SHIFT + ENTER). If a re-boot is carried out during this type of data-base you will have a file left open. To stop the re-boot

POKE &BDEE,&C9

If you stop the user from performing a soft re-boot you should give them a way of stopping the program through the software.

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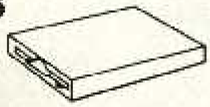
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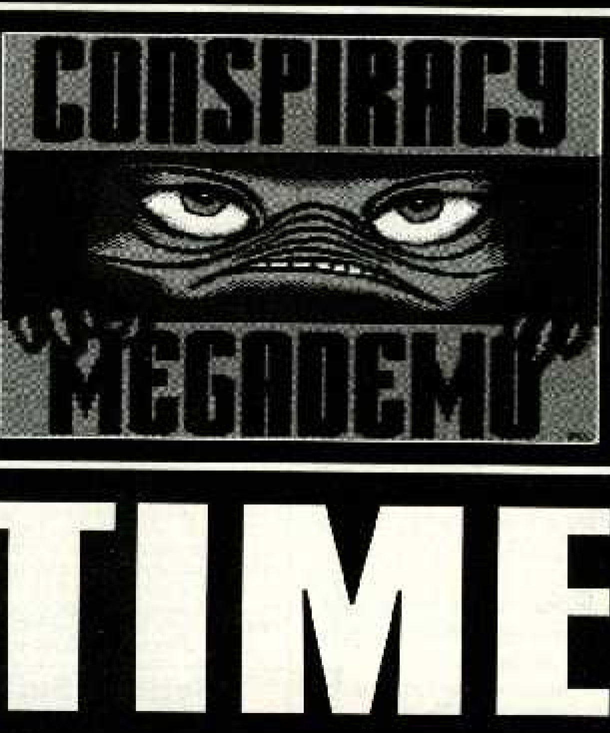
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IT'S DEMO TIME

MACHINE CODE TUTORIAL

Real, moving sprites? No problem - here's ChaRleyTroniC to explain



Since the beginning of time (almost), CPC magazines have been full of letters from would-be programmers wanting to use sprites in their programs. (Sprites are basically small objects from the screen which you can move about). The response has often been to go out and buy a sprite program, or to type in a very long listing. However, for those who know a little machine code, sprites are much less hassle. You might not believe that an all-purpose sprite routine is only eleven lines long, but it is: and it's here on the page for you now.

The basic function of a sprite routine is to get a sprite from somewhere in memory, and whack it on the screen. This is where the Z80 comes into its own because, as you probably know, it has a memory copy instruction called "LDIR". This copies a block of bytes (the length of which is contained in BC) from the address pointed to by HL to that pointed to by DE. So, for example, to copy a screen from &6000 to &C000, you would set BC up to be &4000, DE &C000, and HL &6000.

But what's this got to do with sprites? Quite a lot, actually. In our sprite routine, we need to start at the first row of the sprite, and LDIR the bytes from "sprite memory" (i.e. whereabouts in memory our sprite data is) up to screen memory. The number of bytes we need to LDIR, because screen memory (in rows) is arranged from left to right, is the width of the sprite. We then need to update the screen address to the next line down, and do the same for that line etc.

A quick note concerning the instructions we're going to use. When LDIR has done its work, the width of the sprite will have been added to both DE and HL. This is a good thing for the sprite data (HL), because it moves us on to the sprite data for the next row - which follows on immediately afterwards. It's not a good thing for the screen address (DE), however, because it means DE will have been set to a point just to the right of the sprite - not something we want. So to preserve their values, we push DE before the LDIR, as well as BC (which is zeroed), and pop them afterwards.

As far as the dimensions of the sprite are concerned, we use B for the height (in pixel rows). This is to allow us to use the DJNZ instruction (decrement B and jump if not zero) to create the loop needed around the line copy. It makes sense, then, to use C for the width. This makes it easy to convert C to BC, the width of the sprite, simply by setting B (the high byte) to zero.

With all that in mind, here's the routine. It calls another routine, "nline", which is our routine to convert the screen address in HL to one line below - it'll be explained later. To use the routine, set HL to be the address of the sprite data, DE to be the screen address (e.g. &C0A7), B to be the height (in pixels) of the sprite and C to be its width (in bytes: one byte is one MODE 2 character, half a MODE 1 character, or a quarter of a MODE 0 character).

```
sprite:
push de  ;preserve screen
          address
push bc  ;and the dimensions
ld b,0   ;BC now equals the
          width in bytes
ldir     ;copy the bytes!
pop bc   ;get back the
          dimensions
pop de   ;and then the screen
          address
ex de,hl ;to move DE onto the
          next screen line,
call nline ;we use the routine to
          move HL onto the
ex de,hl ;the next line, but
          swap DE and HL either
          side
djnz sprite;if not all lines done,
          loop back
ret
```

"Hang on!", you say, "What's the point of writing a sprite printing

routine if we haven't got a routine to put the sprites into memory in the first place?" Good question. Fortunately, it's simple to convert the above routine to become a 'sprite grab' routine. As we're copying from the screen TO the sprite memory, HL will become the screen address, and DE the sprite data address. B and C are set as before.

```
grab:
push hl  ;preserve the screen
          address
push bc  ;and the dimensions
ld b,0   ;BC now equals the width
          in bytes
ldir     ;copy the bytes
pop bc   ;and get the screen
          address
pop hl   ;and dimensions back
call nline ;move HL onto the next
            line
djnz grab  ;loop back if not finished
ret
```

As you can see, it's virtually the same as the sprite printing routine! One thing is left to be resolved: the routine to convert HL (as a screen address) into its equivalent screen address, one line down. To move down one line, we need to add &800 to the screen address (which is equivalent to adding &00 to the low byte - so we can leave that alone - and &8 to the high byte). However, you can probably work out that before long, doing this will run over the end of screen memory: in which case, the address will have wrapped round to the start of memory again, so all we need to do is add &C000 (to shove it back up to screen memory) and &50 (or 80 in decimal, to move onto the next character line). Here's the routine to do it:

```
nline:
ld a,8
add a,h   ;add 8 to H (the high
           byte)
ld h,a
ret nc    ;return if no overflow
push de   ;otherwise preserve DE
ld de,&C050
add hl,de ;add &C000+&50 to HL
pop de    ;and get DE back again!
ret
```

That's it, then: the three routines needed to use sprites. Elsewhere on the page is a short demo of the sprite routines, in the form of a BASIC loader and a machine code listing. Assemble the listing (making sure to add the "sprite", "grab" and "nline" routines) into a file ("SPRITE.BIN", for example), and RUN the BASIC program. This is a good demonstration of what can be achieved with a short program.

Your demo can now include sprites, rasters, and all sorts of scrolls. Next time we'll begin an in-depth investigation (sounds like The Cook Report) of the CRTC - which, as well as being the shortened version of ChaRleyTroniC, is the video chip inside the CPC which lets you do all sorts of flashy effects. If you think that you know everything there is to know about this chip, then think again - how does a full screen with no border strike you? In the meantime, questions, suggestions and (especially) your demos are welcome at:

CRTC's DEMO TIME,
CPC ATTACK!,
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or fax 071-387 9518.

THE CODE

```
         org &7000

         ld hl,&C000       ;screen address for grab
         ld de,&8000       ;and where to put the sprite
         ld b,32           ;32 pixels high (4 characters)
         ld c,16           ;and 16 bytes wide
         call grab         ;grab the sprite

         call &BC14        ;clear the screen

ffloop:  call &BD19        ;synchronise to frame flyback

         ld hl,&8000       ;sprite data location
         ld de,(scradd)    ;get where to put it from "scradd"
         ld b,32           ;32 pixels high
         ld c,16           ;16 bytes wide
         call sprite       ;display the sprite!

         ld hl,(scradd)    ;get the address again
         ld de,(direct)    ;and the direction of the sprite
         add hl,de         ;now add the direction
         ld a,&40
         cp l              ;are we at the right?
         jr z,change       ;if so, change direction
         ld a,0            ;we're not at the right
         cp l              ;but are we at the left?
         jr nz,store       ;if not, just store the new address

change:  ld a,e            ;otherwise change direction
         neg               ;(this routine changes DE from -1
         ld e,a            ;to +1 and vice versa)
         ld a,d
         cpl
         ld d,a
         ld (direct),de    ;and store the new direction

store:   ld (scradd),hl    ;store the new screen address
         jp ffloop         ;and jump back to frame flyback

scradd:  dw &C000          ;store for the screen address
direct:  dw 1              ;and for the sprite's direction

    ;Put the "sprite", "grab" and "nline" routines here!
```

WHOOPS!

In issue 2, we promised a table of hardware colour values for rasters.
Unfortunately, it never appeared. (Whoops!) Better late than never, here it is in all its glory:

colour	hardware
0	&54
1	&44
2	&55
3	&5C
4	&58
5	&5D
6	&4C
7	&45
8	&4D
9	&56
10	&46
11	&57
12	&5E
13	&40
14	&5F
15	&4E
16	&47
17	&4F
18	&52
19	&42
20	&53
21	&5A
22	&59
23	&5B
24	&4A
25	&5E
26	&4B

THE BASIC LOADER

```
10 MEMORY &6FFF:LOAD"sprite.bin",&7000
20 MODE 1:CALL &BC02
30 WINDOW 2,40,1,25
40 PEN 1:FOR n=1 TO 23
50 READ a:PRINT CHR$(a);:NEXT
60 PEN 3:PRINT"ATTACK"
70 CALL &7000
80 DATA 150,154,150,156,150,154,13,10
90 DATA 149,32,151,153,149,13,10
100 DATA 147,154,145,32,147,154,13,10
```

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COMMERCIAL QUALITY PD

Moving on swiftly brings us to the ever-popular subject of Commercial Quality PD, so without much further ado, let us investigate just what's out there and can it really be any good? Ya damn right, it can!

UTILITIES

RAMBASE 3

The 6128 Database program from John Fairlie is a classic example of how public domain products can satisfy the needs of the user.

This contains just about every feature most home users could ever want from a database, from the basic sort and printing, to the more unusual keyboard macros. While it may not be as fast as the commercial databases in certain features, it certainly isn't too slow to be unusable. Where it does score over commercial products is in the authors dedication to continually upgrading the program, especially when a request for a particular feature (such as keyboard macros) is made. An excellent program which should be first on your list if you're looking for a database, and last on your list if your looking for a disk copier...

PD PLANNER

The only non-CPM spreadsheet written especially for 128K machines. The program features everything any home user could possibly want from a spreadsheet including formulae and altering the size of the spreadsheet itself. Paul Dwerryhouse, the author of this program, has produced an excellent, and cheap,alternative to commercial spreadsheets. What's more it comes with full instructions on its use.



PD or not to PD, that is the question, and increasingly the answer nowadays seems to be yes, why not?

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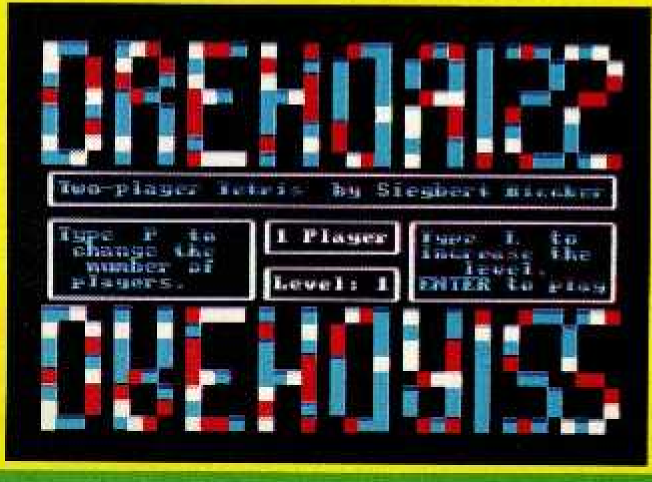
GAMES

FORCEFIELD

Remember Bounder? This game follows in a similar fashion. You control a bouncing square which has to bounce around 100 levels destroying all the blocks on the level. What makes it even more difficult, apart from the arrangement of the blocks, are the special surprise squares. These do a variety of things from reversing the controls, teleporting to a different part of the level, to extra lives. Forcefield is amazingly addictive, and frustrating - you'll probably never get past level 20, never mind level 100! Excellent.

DREHDRISS

Without a doubt, the best Tetris clone ever for the CPC. Simultaneous two player action, incredible speed, authentic sound effects, and save high scores to disk. The two player mode is particularly good, because both players get the same shapes at the same time, so it is very easy to compare different players methods and tactics. This game is amazingly addictive, much better than the commercial release, and guaranteed to give endless nights without sleep.



SPACE FROGGY

Written using the Sprites Alive game creator/compiler, Space Froggy is a platform game. The idea is simple, you control a weird green creature which travels around a strange world collecting 9 6128 ROM chips. Control is via joystick only, the graphics are colourful, and the whole game plays quite quickly. This was given away free with Amstrad Action and was reviewed in Amstrad Computer User, both said the same thing; it's as good as any budget game on the market, and I agree. Enjoy.



LOST PHIRIOUS

Three text only adventures written using the Quill, each adventure follows on from the other and you must complete the first to do the second, and the second to do the third. A fourth game was due to be written but never appeared, the storyline for it is on the disk too. All three games were



SOFTARC

Written by Rob Scott from STS Software, this is one of the more unusual programs, but a very useful one. Basically it takes one side of a 3" disk and saves it as one headerless (fast loading) binary file to cassette, to be transferred back to disk at a later date. With the price of 3" disks still £1.70 to £2, Softarc releases valuable disk space. Of course it doesn't make sense to use Softarc on programs you'll use quite a lot (such as Rambase 3!), but disks of text files, pages from Powerpage backups of important programs, in fact anything that you very rarely use but don't want to get rid of, Softarc is ideal for. Commercial programs of this type cost anything up to £8.50 (try Goldmark Systems if you don't believe me) and Softarc is as fast and reliable as any such program.

ISPELL

Another excellent program from Paul Dwerryhouse and, as far as I know, the only public domain spell checker that runs under Amsdos. Again this program is for 128K machines only, but it does come with a full 64K dictionary which can be freely edited. The actual spell checker is a touch slow, probably because it is written in Basic, but if not required frequently then it is a viable alternative to the commercial products.

HIGH CAPACITY FORMATTERS

RAMDOS is looked upon as the best non-ROM based extended formatting routine for 3.5"/5.25" drives commercially available. Even from the ROM based programs, ROMDOS (the same as RAMDOS but on ROM) is widely recognised as the one to have. Recently many new extended formatting routines have become widely available, perhaps the most well-known being MS800, but these are still expensive compared to public domain programs. Are they worth it? The short answer is maybe! You see RAMDOS will allow up to 800K under both CP/M and AMSDOS, MS800 will allow the same, but only with a side switch fitted. XFORM, the best of the PD utilities, allows up to 800K in CP/M, 400K in AMSDOS, without a side switch, or up to 800K in both CP/M and AMSDOS with a side switch fitted. In comparison, RAMDOS is the best, but XFORM isn't far off MS800 if you have a side switch (which costs about 50p to make and requires no soldering).

GPAINT

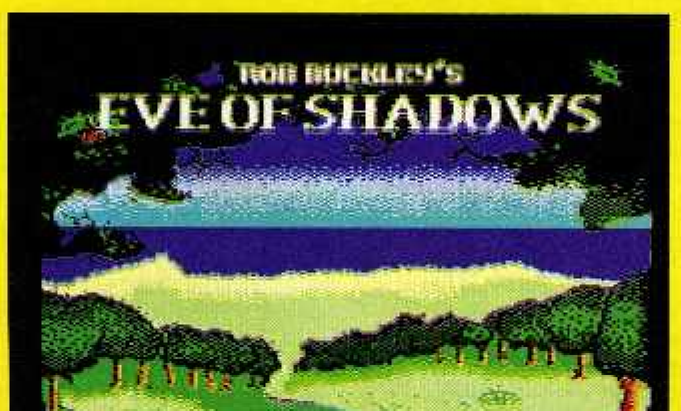
Without a doubt, GPAINT is the ultimate in public domain art packages. It's written in machine code, uses an ICON system, works in all three modes, has user definable fills, a wide range of shapes, and fonts in various sizes. It's VERY good, VERY

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previously, and still are, sold commercially, but the author has also released them into the public domain. If you're an adventure fan, get these (after Eve Of Shadows), you won't be disappointed.

EVE OF SHADOWS

Voted the second best 8-bit graphic/text adventure at the Adventure Probe convention (first place went to a Spectrum game), and it certainly deserves the prize. Graphics are superbly detailed and beautifully drawn (in mode 0), and the game is styled very much like Lord of the Rings, with the ability of the player to swap between the two main characters. This is undoubtedly better than many of the commercial adventures available on the CPC, and deserves all the success it gets.







CROCO MAGNETO

Another amazingly addictive machine code game. In this you play a small green blob which has to collect 92 jewels from a cavern of 23 screens. To hinder his/her progress there are several radioactive pads which kill your blob on collision. The blob moves left and right automatically, changing direction when it collects a jewel or hits a wall, all you have to worry about is the vertical control. A jolly little tune plays throughout which adds atmosphere to this very fast and addictive game. Croco Magneto originated from Croco News, a french disk based fanzine.



good indeed. Compared with the Art Studio it still fares well, and although isn't as good, it isn't too bad. In fact unless you own a 128K machine, and can run the Advanced Art Studio, then GPaint should satisfy your every need.

FORMATTER

Why people spend up to £8 on programs of convenience is beyond me, they must have more money than sense. Still, it is a pain to go into CP/M every time you want to format a new disk, and the routine isn't exactly fast. Enter stage right, Formatter, a very small program hidden almost as an afterthought in most PD libraries. serious selections. This formats a disk in around 30 seconds and features System, Data, IBM and PCW formats. Very good indeed and just as good as any commercially available product.

JL-DISC COPIERS

Disk copiers can sometimes cost up to £15 or so, what a waste, you're much better with the JL copiers. These are written by Jorn Lorentzen from Denmark who is much better known for his tape to disk work under the pseudonym of JLCS. There are six programs in the range, file/disk copiers for 64K and 128K machines, and even for machines with 256K RAM packs. The 128K copier is one of the fastest around, needing only two disk passes, however, the system is let down by the cumbersome file selection system. The 64K copier even handles some "funny format" - very handy! An excellent set of copiers, they even beat some of the commercially available ones!

POWERPAGE

No round-up on Commercial Quality Utils is complete without a run-down on what must be the best Public Domain DTP

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NEWS

This month sees the introduction of two new PD libraries, and one fairly mature one, plus the closing down of another old one!

GDPD Software have just opened their doors, with 34 selections of PD including the excellent Croco Magneto (EVERYONE seems to have that nowadays don't they?), and also David Wilds' superb Desktop program.

Hex Heroes (!) PD Library were originally a C64 (curse!) library, but have very wisely decided to move up in the world to the CPC PD Scene! They have 18 discs in the library and charge 50p per side to copy software, which apparently includes a copy of their latest newsletter and disk list. HH also do PD on tape, which is fairly unusual these days. Richard Marra, who runs the joint, says that if any readers have any programs that they have written and are willing to donate to his library all they have to do is to send the program in on disk or tape, along with a blank disk, and he will send some free software back for their troubles.

MPD software, run by Martin Elliott have been up and running since 1991 and have 44 discs in their collection. They charge 50p per side of software, plus 50p postage and packing (or you can supply an SAE). If you don't want to send them a disc, they will supply one for an extra £3.00. Martin also designs a monthly newsletter and updates the stock list "every time something new comes in!".

Penguin Software, run by David "Amiga Graphics" Carter has closed it's doors on the PD world. Please do not send any more orders to him, as he will probably be unable to fulfil them.

SheepSoft, run by the ubiquitous Paul Fairman is another fairly new PD library based in Wales (where men are men, and sheep are scared!!) Running his CATalogue disk presents you with an organised menu, and (it has to be said), a very annoying interrupt driven tune!

Selecting the SHEEP file to read, you are presented with a 51k text file, produced on VDE, which gives very comprehensive information on not just SS, but also all the other major PD libraries in Britain. It's nice to see this kind of thing, because I know other libraries who spend most of their waking hours slagging their counterparts off. As well as information on the PD Scene in general, there are parts of this file on such diverse topics as Protection Systems, Full price software, and the carnal goings on between Cody and Todd in Neighbours. This has to one of the best information files I have read, and to be honest one of the funniest. Well done SheepSoft PD...I'll be in touch soon...

On the subject of new PD libraries, lets get a few things straight shall we? A bit of PD etiquette if you will.

If you are opening a new library and you are ordering software from other established libraries make sure that you inform them of this fact. This is the polite thing to do. Most libraries will be more than happy to copy your requests, but be honest at all times, because the PD grapevine is VERY well connected, and the librarian concerned WILL eventually find out. There are some librarians that seem to resent other libraries ordering programs from them on the

package around. PowerPage was written by Richard Fairhurst who runs Robot PD, who says he did it to prove a point which was that a program costing in effect 22.5p could be as good as a commercially available one. And very good it is too! So good in fact that it has been often emulated, but never beaten and has all the features that you would find in a full-price DTP program, including very flexible text manipulation, CUTout import routines, and excellent font handling, with both standard 8x8 and Stop Press fonts catered for. If you haven't already got this program, then get it, and you'll see what I mean.

LIBRARIES CONTACTS

Dartsma PD, 47 Kidd Place, Charlton, London

GDPD, 49 Woodville, Barnstaple, N.Devon EX31 2AY

Hex Heroes, 24 Woodend Lane, Stalybridge, Cheshire SK15 2SR

Robot PD, 2 Trent Road, Oakham, Rutland LE15 2HF

Sheepsoft, 39 Woodlands Road, Barry, South Wales CF6 6EF

Sleepwalker PD, 9 Meeting House Lane, Balsall Common, Nr. Coventry CV7 7FX

MPD Software, 23 Nobes Avenue, Bridgemary, Gosport, Hampshire PO13 OHS

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grounds that they've "spent xyz years collecting the software, why should I give it away!)" - because that's what PD is about surely. Some libraries will argue that they will only "swap" software with new libraries, but if you are one of the BIG names in the PD world, then the chances are that you will already have what they want to swap with you won't you? Let me know if you come across this phenomenon, and if you are the perpetrator of this strange crime, why not write us an essay entitled, "Why I am a stingy git this software is mine...all mine I tell you" in not less than 1000 words...

Recently a lot of complaints have been reaching my ears about certain PD libraries having VERY slow response times, sometimes in excess of 9 weeks. This, I feel is partly due to the fact that a lot of PD libraries are run by young enthusiasts, who have things like exams to cope with at the moment, so please be patient and remember that people's futures are being decided here and tempers and stress are running a little high (it wasn't so long ago that I was going through all that! Some libraries are by their very nature slow at delivering, and some are also honest enough to say so in their disk catalogues, if you don't like waiting then heed the catalogue and order from another library. Anyway by the time you read this article, however, all problems should be over...amd summer holidays begin!!! Yeah...I'm going down the beach...(COME BACK HERE...Ed.) Ohhh...RATS!!...

If certain libraries do not improve their quality of service, then let me know, and I may decide to print their names...

Dartsma PD, run by Mr. Bargain himself, Adam Shade, have recently had a massive revamp. The new 1992 Catalogue is almost ready, and Adam has even released a paper catalogue/newsletter which, as well as having details about his PD disks also has a whole plethora of other goodies to offer. These included Plus machine hardware upgrades, Plus diagnostic Carts, service manuals, and too many other things to mention! Adam is getting quite a reputation for himself, for not only running a very good, efficient PD library but also for the amount of research work on behalf of Plus machine owners. In the last six months or so Adam admits he has been very slow at sending out CATalogues and apologises to all his customers, this was due to CATalogue compilation and printing difficulties, and getting tied up with A levels and the like. As I said earlier, by the time you read this all should be back to normal. Look out for some VERY special widgets from DARTSMA very soon. More news exclusively in CPC Attack! very soon. News just in is that DARTSMA and STS Software should be having a stand at a forthcoming All formats fair. This will be an excellent chance to meet Adam Shade, and Rob Scott - who will both be there flogging their wares (oohor Missus - don't titter!!), as well as picking up some "reet good bargains!!" Dartsma is definitely the library to watch in 1992, they just seem to get bigger and better!

PD REVIEW

VDE

Okay, onto the main software review for this month. One of the big things that dropped through our postbox this month was a pretty good PD word processor called VDE. As I understand it, VDE has been in the public domain for some time but what makes this version so special, are the enhancements that have been made to it by Paul Fairman, the head honcho of SheepSoft. Paul wrote in last month to the letters page, and ranted on about VDE, so we thought that this month we ought to mention it, especially seeing as VDE is completely FREE!!

The main thing that Paul has done with VDE is on the spell checker side, by increasing the dictionary from 7000 words to 10,000! No mean feat for any man (or sheep!). Although VDE requires a small amount of setting up, anyone with half an ounce of sense should have no problems. The main thing I like about this program is the amount of text space you have under CP/M over 60K (!) compared with, at best 39K under AMSDOS. Indeed Paul used it to create the SHEEP text file on his catalogue disk which is 51k long. Anyway, what's it like, I hear you asking. Well it's slow, but that's expected from CP/M anyway, but it is fully implemented with features such as FILE MERGE, FIND and REPLACE, DELETE and UNDELETE line, PARAGRAPH REFORMATTING, LINE CENTRING, and basic block operations. It can be fairly cumbersome at times but, as I say, is free. If you would like a copy, just send a SAE (Jiffy Bag with Stamps on it), to SheepSoft.

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PCW8256/8512 FN	2	5.10	1.18	EPSON MX100	2	-	-
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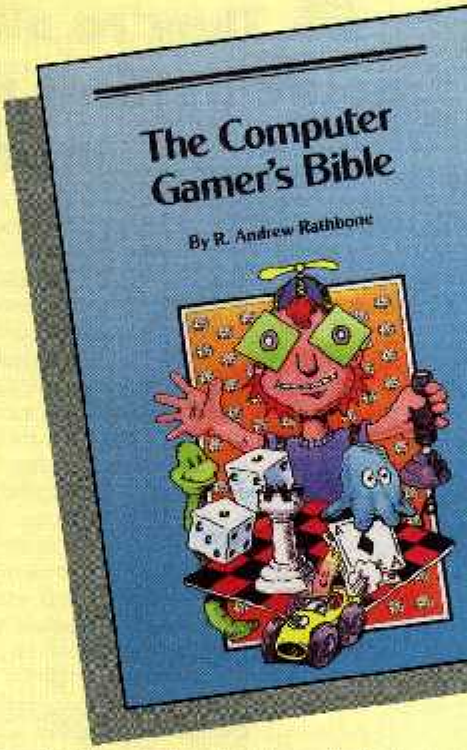
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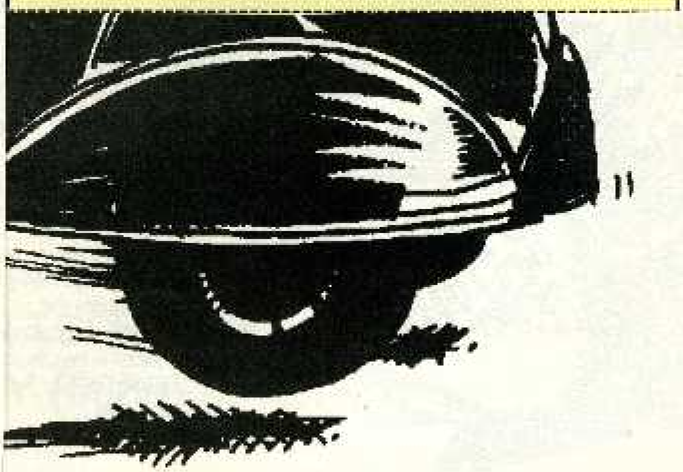
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NEED HELP?

As we said before, most questions we get may appear to be easy peasy, but we can deal with hard ones too! (Oooh, er missus). If you need any type of technical advice then get scribbling. The address is:

Q&A,
CPC Attack!,
HHL Publishing,
Floor 3,
Greater London House,
Hampstead Road,
London
NW1 7QQ
or FAX: 071-387 9518
Please DO NOT PHONE
as we are busy bunnies

Q What do WAVEs, dongles and Aussies have in common?

A They're all in Arnold's postbag this month!

Q **With regard to the reader who wonders about sending their Amstrad 6128+ through the post to W.A.V.E. for conversion. The cost of insurance & postage is about £3.00, and it covers up to and between £200 - £350.**

The tape recorder MUST have an earphone socket and the computer is plugged into this or an OUT socket. You CANNOT use REMote as there is no remote fitted to the machine, which means that you will have to pause the tape recorder yourself.

At the moment W.A.V.E. are taking about 2 weeks to convert a 6128+ and don't forget having it converted will invalidate the guarantee etc.

Mr M.J. Williams

A Thanks for the info. I'd also like to point out that R&C Systems Design (081-552 8900) also do the tape Mod. for the Plus range for £20.00 plus postage.

Q **I have a CPC6128 with colour monitor and a tape recorder along with a Multiface**

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following in BASIC and you'll see what I mean. Type OUT &FEE8,&FF, press the ESCape key and the Multiface menu pops up like magic! All you do to get round the problem is to press the RED button, to get the Multiface menu up, and then press "R" for return and load the game as normal. The Multiface can still be used as normal once the game has loaded.

Q **I have a 3.5" disk drive with my CPC 6128 computer, and recently I knocked it onto the floor. Now when I try to use it, all I get is "DRIVE B disc missing Retry, Ignore or Cancel ?". It is out of warranty, and I can't afford a new one. Can you help ?**

**Roachi Havihashi,
Liverpool**

A Okay, try this. Locate the casing screws on the disk drive and undo them. Carefully prise the casing apart and look at the back of the drive to where the wide grey cable goes in the back. You will most likely find that this cable has come loose at one side, so gently push it back

... r a

only? (I don't want a CPC6128 etc.), can you help?

**G.Pearson,
Southampton**

A Why not give R&C a call (see above.) They specialise in the repair and upgrade of CPC hardware.

Q **I own both a 464+ and a CPC 6128. The monitor with my 6128 is Green, and I basically bought the plus dirt cheap to use the colour monitor from it. The only problem is that both the plugs don't seem to fit into my CPC6128. I don't know how to solder, let alone own a soldering iron. Please can you help me? Perhaps you would be able to make me a cable to do such a thing, I am quite willing to pay a reasonable price.**

**Graham Robinson,
Devizes**

A Well Graham Adam Shade from DARTSMA PD sells leads to connect a Plus to CPC monitor and vice versa for the very reasonable price of £4.99 including P&P. Look in the PD column for his address.

Q **I am writing to you for your assistance because, as you are probably aware, sales of the AMSTRAD CPC computers have now been discontinued in Australia for some time.**

This is a real shame, as it seems that all Amstrad Australia are interested in are the current Models, i.e. the PCs. I rang them for some

HARDW
Q&A

information only to be told that if I needed help I should contact England for programs or discs and magazines! This was the same answer I received from what was Australia's only magazine for the CPCs called Amstrad User, but it has since changed to the PC MAG, and as the name suggests it is basically all PC dominated, with only a very small section for the CPC's.

The Amstrad CPC is still a very widely used computer here in Australia , mainly because a lot of the schools over here purchased



Q&A

...WARE
...&A

them, and they sold at an affordable price. We assumed that the CPC would be around for a long, long time.

A lot of the computer clubs in Australia have now changed over to the PC machines, not because they are better than the CPC, but because the PC is becoming very popular.

There are very little in the way of programs and hardware now left in Australia, as most shops only stock PC and compatible hardware.

As, no doubt, many others in my situation would like to know, could you please answer the following questions:

• Do programs purchased for the English CPC work on the Australian CPC's? The reason I ask this, is because there was an article in Amstrad User that stated that not all British programs will work on Australian CPC's.

• Will the following items of hardware work in Australia?

FD1 Second 3" Disk Drive, TV Tuner, Clock Radio, Video Digitizer.

Mr D.K. Partridge, Australia

A I am sorry to hear of your problems with suppor regarding the CPC computers, and I realise that the situation is pretty dire as far as CPCs go.

In answer to your questions: All programs that work on a British CPC will almost certainly work on an Australian model. The possible exceptions lie not in the actual differences between British and Aussie CPCs, but because on some versions of the Early 6128's, there were problems experienced with the Gate Array overheating, and this sometimes caused some games not to load.

The FD1 second disk drive will work fine on Australian CPCs. If Australia uses PAL 1 (Phase Alternate Line) Transmission for TV broadcasts, then yes the TV tuner will work.

The clock radio will work fine - The Video Digitizer will work fine, as long as your Video recorder has PHONO Composite Video outputs.

Q I have had my CPC464 for 5 years now, and it has done me sterling service. However, recently it has refused to load some of my tapes. A friend of mine mentioned something about alignment, but says that he doesn't really know anything about it. Can you help me ?

Peter James, Cambridge

A Your friend's quite right when he says that the problem could be caused by misalignment. You see, the angle that the tape travels over the head is critical for loading pre-recorded software, and should be at exactly 90 degrees to the tape path. What you will probably find is that the little screw under the small cutout has worked itself a bit loose. You can get alignment programs for it.

What this basically means is that the tape head, that reads the data into the computer, has moved slightly and the signal is not as strong. To realign the tape head is actually a very simple procedure, providing that your hearing is pretty good.

Firstly, put the tape player into PLAY mode, then place a small watchmakers crosshead screwdriver into the hole in below the cassette door. Inside is a small screw. Turn it anticlockwise or clockwise very slowly, and stop when the sound is the clearest. That's all there is to it.

Q Why won't my old Rombo Romboard work on my new 6128 plus machine? I thought



all the connections and things were the same?

David March, Manchester

A Ahh...er the connections are indeed the same. The problem lies in the power levels supplied by the Plus monitors. You see, the PLUS machines were designed to have low-power consuming chips in them, presumably because the power supply in the monitor would be cheaper to produce. The old ROMBO romboard have the standard 74HC logic chips in them, which are the higher current version of the 74 logic family. Rombo will, I'm sure, convert your board to the new lower power 74LS series chips.

Q My four year-old CPC monitor is playing up. When I switch on the computer, I appear to have lost the RED colour. What is wrong, has the picture tube died or something?

Jim Harker, Southampton

A Hmm...This problem I've seen before, and it's very unlikely that the picture tube is damaged. What you will probably find is that the RED connection inside the moulded monitor plug is broken. Try R&C on 081-552 8900, they should be able to quote you a reasonable repair price.



PROGRAMMING Q&A

Q I am relatively new to computing (being in my mid-50s). I am trying to write a program to add certain numbers together, and then display the results as a whole number. I have looked in the manual, but to be honest I got a little bit baffled by all the other stuff in there. Does the CPC have an Integer function, and if so, how does it work? (I have a CPC6128!)

David Jones, Cardiff

A Yes indeed, glancing at the CPC6128 manual gives you all the information you need to know. The INT function works as follows. PRINT INT(non-integer number), i.e. PRINT INT(123.456) gives you 123.

Q I have a Multiface 2 for my CPC6128, and am having trouble loading the screens into the Advanced Art Studio. I have tried renaming them, but all I get is gibberish. Why won't it work ?

Simon Peters, Portsmouth

A The multiface saves the screen memory with extra bits of information tagged on at the end of the file. This means that the file is just too long for most art packages to cope with. This should help.

```
10 MEMORY &3fff :LOAD"screen. bin", &4000:CALL &8000
20 CALL &BB18:SAVE"screen.scr",b,&c000,&4000
30 END
```

Change the filename in lines 10 and 20 to the filename of the screen you want to save. When you run the program, the screen will be displayed, and then it will wait for a key to be pressed. Insert the disk you want the screen on in the drive, and press any key. It will then be saved in a format that will load into the A.A.S.

Q I am writing a program where I need to know the Machine ROM type, and also whether the machine has extra RAM in it. Can you help ?

James Moore, Aldershot

A Type in the following, and merge it as part of your program:

```
10 ************************************
20 '* RAMTEST and MACHINE TYPE routine*
30 '* by Rob Scott *
40 ************************************
50 '
60 'code=&8000
70 'FOR a=&8000 TO &803E:READ c$
80 'POKE a,VAL("&"+c$):NEXT
90 'CALL code:CALL code+3
100 '
110 machine=PEEK(code+&3E)
120 ramyes=PEEK(code+&3D)
130 '
140 END
150 DATA C3,06,80,C3,33,80,21,00,40,3E
160 DATA C4,06,7F,ED,79,77,3E,C0,ED,79
170 DATA 3E,C4,ED,79,AF,7E,FE,C4,CA,29
180 DATA 80,D6,04,ED,79,3E,00,32,3D,80
190 DATA C9,D6,04,ED,79,3E,01,32,3D,80
200 DATA C9,0E,00,CD,15,B9,7C,32,3E,80
210 DATA C9,00,00
```

When run the machine type will be held in the variable "machine". If it is 0, then the machine is a 464, 1 then the machine is a 664, 2 then the machine is a 6128 and if it is 4 then the machine is a Plus! The extra ram flag is held in "ramyes". If it is 0 then the machine DOES NOT have extra RAM, and if it is 1 then the machine DOES!

Q I used the routine in last month's CPC Attack! on page 64, that flushes the keyboard buffer, but it seems to slow things up slightly. Is there a faster way of doing this (a CALL perhaps)?

Jason Lyons, Exeter

A Yes, a firmware call does indeed exist in all versions of CPC firmware to do the job. Replace the whole routine on page 64 with CALL &BB03.

Q Is there any way to tell which of the two disk drives are being used on a CPC6128, as I am writing a program which needs to be able to detect which drive it runs on.

Mike Packard, Frisby

A Yes, the memory location &A700 hold the currently selected drive number. The following program will help you understand how to use this information.

```
10 drive=PEEK(&A700)
20 IF drive=0 then print"DRIVE A"
30 IF drive=1 then print"DRIVE B"
40 rest of program
```

As you can see, the drive byte is 0 if drive A is being used, and 1 if drive B is being used.

Q I own a CPC464 and for a while, knowing its limitations, have been thinking about various ways of upgrading . I've considered a 64k RAM expansion and disc drive, but realise that this would allow me to load all but a few programs for the CPC6128. Another idea I have had is having a microchip conversion carried out and buying a disc drive. I have also thought about selling my whole CPC464 system tapes and all, and just buying a second-hand colour 6128 system. I have two questions for you. Firstly, if I have the microchip conversion will I still need a DDI-1 disk drive or could I buy any drive at all? Secondly, which of the above would be the best, cost-wise, bearing in mind that I'm 13 years old and a bit strapped for cash?

Andrew Toft, Glenrothes

A Okay, to answer your first question. If you have the "microchip" conversion, (and I assume that you mean having a 6128 ROM chip fitted), you will still need a DDI-1 Disk drive, because the actual interface with all the disk electronics comes with it. Secondly, probably the cheapest option as far as I can see, would be to sell your CPC464 equipment and buy a second-hand 6128. I bought one for £35.00 at the All Formats Fair in London 5 months ago!

Q I'm 12 years old and have had my 464 since 1986. So far I have not had any viruses. Is there any chance of me catching one, as I hear of them on the PC all the time? If there is such a risk, can

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you recommend someone who can supply me with a virus checker?

Alan Brooker, Woking

A I have only ever heard of one virus on the Amstrad CPC,and that was many years ago now. It was written by a coder in Germany (I think), because he wanted to get well-known (and possibly hated?). The virus never got far, and I have never seen one since, so the simple answer is not to worry, but to make 100% sure if you still feel uncertain make backups of all your important disks, and to keep the write protect tab on until you write to the disk.

Q I have just finished writing this really good game, I think it is so good that I might sell it. Could you please, please help me as I want to be able to protect the code, I have used SAVE "..",P but there are many programs to get past this. Also, how can I protect the game from the MULTIFACE, I don't mind having to type any Data bits in, as this should not make it too hard for me.

Paul Jones, Liverpool

A Try poking 0369 with &ff after typing in the program. This will now only let the first line be listed. There are many other ways that can be used to protect basic programs, such as XOR routines etc., but we don't have space here to go into them...we may do an article on it, you never know...

Q Hello, I was wondering if you would be able to help me, I know a far bit about computers and programming, I know quite a lot Of M/C but don't have a Firmware Guide. Could you please tell me how to save a 16k normal screen file in one headerless block?

Kevin Gallagher, Arbroath

A No prob, just type in the program below.

```
1 '*headerless load/save by Rob Scott
2 '
10 FOR a=&a000 to &a018
20 READ bS:POKE a,VAL("&"+bS)
30 NEXT
40 DATA 21,00,c0,11,00,40,3e,ff,cd,9e,bc,c9
60 DATA 21,00,c0,11,00,40,3e,ff,cd,a1,bc,c9
```

To save a screen to tape, type CALL &a000, and to LOAD it back in again, type CALL &a00c. If you have an assembler. I have included the source code below for MAXAM assemblers:-

```
ORG #a000;address to place the code
LD HL,#C000;HL contains start of data to save
LD DE,#4000;DE contains length of data to save
LD A,#FFA contains sync byte
CALL &BC9E;write the block out to tape with CAS_WRITE
RET;return to BASIC
LD HL,#C000;HL contains start of data to save
LD DE,#4000;DE contains length of data to save
LD A,#FF;A contains sync byte
CALL #BCA1;write the block out to tape with CAS_READ
RET;return to BASIC
```

Q HELP - How can I read a character of the screen on my 464, I have tried to use COPYCHRS(#1) but I get SYNTAX ERROR. Please, please help me.

Gary Nesbitt, Glasgow

A Ahh, no problema. Type in and run the following program. Locate the cursor at the screen position you wish to read the character from and then type "CALL &A000". Then PEEKing &BF00 will give the ASCII value of the character read. The example below reads the character in the top left-hand corner of the screen:

```
10 FOR a=&a000 to &a006
20 READ bS:POKE a,VAL("&"+bS)
30 NEXT
40 LOCATE 1,1:CALL &a000 :'X & Y are the coordinates
50 chr=PEEK(&bf00)
60 PRINT"The character read was ";CHRS(chr)
70 END
80 DATA cd,60,bb,32,00,bf,c9
```

So to read the character from the screen you would run the above program and CHR would hold the contents of the location.

Q How can I redefine the control+enter to do something like RUN"DISC"?

Martin Smith, Shrewsbury

A The following two lines of BASIC code will take care of your problems:

```
10 KEY 159,"RUN"+CHR$(34)+"DISC" +CHR$(34)
20 KEY DEF 6,1,0,0,159
```

PRINTER Q&A

Q I have recently added a second-hand Epson LX86 printer to my CPC6128 setup, but seem to be having problems, i.e., every time I try to send something to the printer using PRINT#8,"TEST ...TEST", all I get is gibberish. If I do a printer self-test, everything seems fine, so is my computer faulty or is there something blindingly obvious that I'm missing?

Philip Rutter, Cambridge

A It could be something as simple as you've put the printer cable in the back of the CPC upside down! It should have a small polarising key to one side of it. Try it the other way up. If that doesn't work, then you'll almost certainly find that your printer edge connector is dirty, in which case get an INK rubber, and run it along both sides of the connector until it is shiny.

Q I have been using Protext on ROM for about 3 months now, and am having trouble sending codes to the printer from BASIC and then printing, say if I wanted to print extra small text, and a micro line spacing, when I try to print the text, it comes out normal size. It's driving me mad!

Richard Davies, Pontefract

A The reason that the text is coming out normal size is because when you start printing a document, Protext sends a 27,"@" code to the printer, the code for reset, thus resetting the printer as if you switched it on! To disable this feature do the following:

Type |P to enter Protext. Then type SP to enter the "SET PRINT OPTIONS" menu. Press ESCape, and you will be asked to "CHANGE CONTROL CODES y/n" Type Y for yes, and the screen should clear. A prompt will say "Press printer control letter (A-Z)". Press the @ key (unshifted part). You will be asked "Enter codes for on". Type 0 (zero) and press RETurn. You will be asked "Enter codes for off". Type 0 (zero). Press ESCape twice to re-enter the text, and print text as normal.

Q I am a 17 year-old student, who has just had a luverly Seikosha SP- 1900+ bought for me. When I use it with my Amstrad 1512 PC it works fine, but if I hook it up to my CPC whilst using PROTYPE from Arnor, the damn thing throws out a blank sheet of paper, and then starts printing. Why?

Jeff Maybanks, Doncaster

A Although I have not had experience with either this problem, or the printer, I contacted Adam Shade at DARTSMA PD, who provided me with the answer. Simply flick the Tractor/Loose Sheet lever onto TRACTOR FEED, start printing, as soon as it starts to print, flick the switch back again.

Q My dear daddy has got a real cool PC, and has a real FLASH Laser printer. For years he would borrow my trusty DMP2000, so now I want to use his Laser printer. Please help me (to get my own back).

Jamie Foster, Chichester

A Sorry to disappoint you but there is (as yet) no way to connect a CPC up to a laser printer. There are two main reasons for this. The first one being that the "OLD" CPC's only have a 7-bit printer port, which is completely non standard, and the second is that laser printers rely on control scripts (Special Printer operating languages) to operate them and no CPC art package incorporates any sort of provision for these. However, users of MicroDesign can now have their screens printed out on a laser printer, by several companies specialising in this field.

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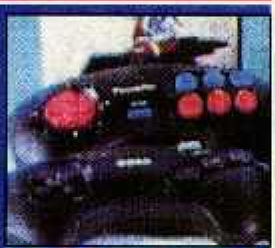
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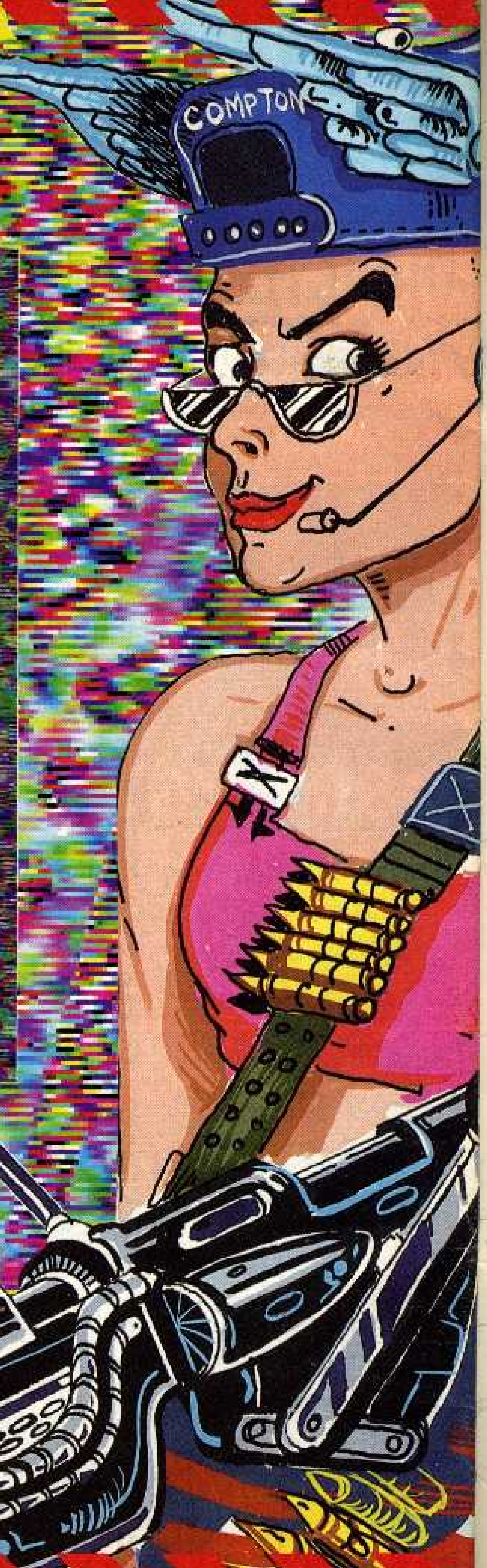
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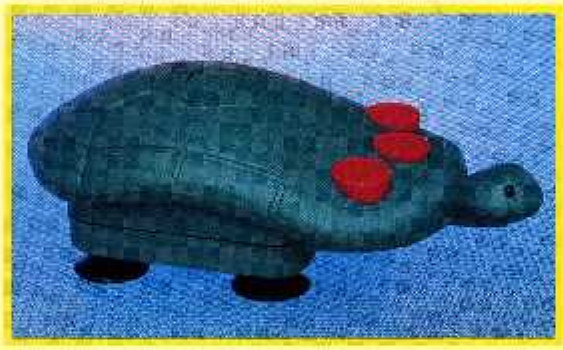
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